

CFX-750™ Display with the Field-IQ™ System: Spraying /Strip Till/Anhydrous Application

Quick Reference Card

RUN SCREEN

The Trimble® CFX-750™ display is a touchscreen display that is configured and run by tapping the icons that appear on the display screen. The image below shows the run screen when using the Field-IQ™ system with firmware version 4.00.



Item	Description	Notes						
1	Quick Access icon	Access common Field-IQ settings, including tank setup and refill.						
2	Pump arming status	Pump armed Pump disarmed						
3	Target rate	The target application rate for the current rate switch position. This is the amount of product that you want to apply.						
4	Actual rate	The actual application rate. This is the amount of product that is currently being applied.						
5	Rate switch position	Indicates the current position of the rate switch. <table style="display: inline-table; vertical-align: middle;"> <tr> <td>Rate 1</td> <td>Rate 2</td> <td>Manual</td> </tr> <tr> <td>1 </td> <td>2 </td> <td>M </td> </tr> </table>	Rate 1	Rate 2	Manual	1	2	M
Rate 1	Rate 2	Manual						
1	2	M						
6	Section control	Shows the current position of the section control switch. <table style="display: inline-table; vertical-align: middle;"> <tr> <td>Automatic</td> <td>Manual</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Automatic	Manual				
Automatic	Manual							
7	Location	Shows the current location and material.						
8	Master switch status	Shows the current position of the master switch. <table style="display: inline-table; vertical-align: middle;"> <tr> <td>On</td> <td>Off</td> <td>Jump start</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	On	Off	Jump start			
On	Off	Jump start						
9	Section and control	Indicates the current status of the sections.						
10	Sensor status	You can add up to two sensors to this location with their setup name. For more information, see <i>Sensor setup</i> (page 5).						



BEFORE YOU START

Installing Field-IQ hardware

Warning: Anhydrous ammonia (NH₃) can cause severe burning, blindness, or death. Before you begin to operate or service equipment that contains NH₃ or any other chemical, carefully read and follow all safety instructions in the *CFX-750 Display User Guide*.

For information on installing Field-IQ™ system, refer to the *Field-IQ Installation Instructions*. For the latest versions of these documents, go to www.trimble.com/agriculture.



Help




The CFX-750 display has built-in, context-sensitive Help that lets you quickly find information you need. To access Help from any configuration screen, tap . When you are finished with the Help screen, tap .

Note - For more information on how to use this product, refer to the latest version of the *CFX-750 Display User Guide*.

Setting up the Field-IQ system on the CFX-750 display

Navigating the display:

- Tap  to return to a previous screen.
- Tap  to discard all changes and start again.

1. In the guidance screen, tap Settings  and then tap **Implement**
2. Tap **Application Control**.
3. If you are setting the system up for the first time, tap **Initial Setup**. If you have previously installed the Field-IQ system, more options will appear. Select **Implement Setup**.
4. In the *Controller Type* screen, tap **Field-IQ** and then tap .
5. A summary screen appears. Verify that all hardware that was installed is recognized and then tap .

IMPLEMENT SETUP

1. From the *Implement Operation* drop-down list, select *Spraying*.
2. Select *Implement Layout*.
3. Set the *Implement Measurements*. The options are:

Select	Description
Implement Width	Total width of the implement.
Number of Rows	Not used for sprayers. Needs to be higher than the number of sections.
Overlap / Skip	Distance of overlap or skip between passes.
Left/Right Offset	Distance the implement is off from the center line of the tractor.
Forward/Back Offset	Distance of the application point from the antenna (for manual guidance) or from the fixed axle (for the Trimble EZ-Steer®, EZ-Pilot™, or Autopilot™ system).
Implement Draft	Distance that the implement is drafting.

4. Set up the *Implement Switch*, if applicable. The options are:

Select	Description
Number of Switches	Number of implement switches hooked up to the Field-IQ system.
Min Changed Switches	Number of switch changes that are required to show the implement in a lifted state. For example, if three switches are hooked up to the Field-IQ system and this setting is set to two, the system must see two switches in the lifted position before the implement appears as lifted on the display.

MATERIAL SETUP

1. In the *Application Control* screen, tap **Material Setup**.
2. Tap **New Material**.
3. Select *Material Type*.
4. Enter a *Name* for the material.
5. Set the *Application Rates*. The options are:

Select	Description
Target Rate 1	Preset rate for position 1 on the rate switch.
Target Rate 2	Preset rate for position 2 on the rate switch.
Target Rate Increment	Rate increase/decrease when the rate adjustment switch is clicked once.
Manual Rate Increment	Value increase/decrease when the increment switch is clicked when the rate switch is in the manual position.
Minimum Rate	Minimum rate that can be applied.
Maximum Rate	Maximum rate that can be applied.

6. Complete the *Operation Setup*. The options are:

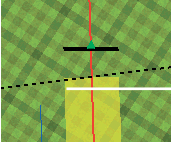
Select	Description
Jump Start Speed	The speed the control system will use when the switch is in this position.
Shutoff Speed	The speed at which the system will shut down.
Minimum Override Speed	If the speed is below this value, the control system will act as if it is still at this speed.
Apply Latency to Boundary	If yes, the latency values apply to field boundary and exclusion zones.
Rate Snap	When on, if the Applied Rate is within 10% of the Target Rate the Applied Rate is displayed as the same value of the Target Rate.

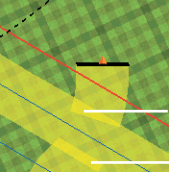


CONTROL (LOCATION) SETUP

1. In the *Application Control* screen, tap **Control Setup**.
2. If this is the first time you are setting up a control, tap **Unassigned**.
3. Enter a location name.
4. For *Material Assignment*, select the material set up previously.
5. For *Material Control*, indicate if you are using switch boxes or the display only.
6. Set up *Section Control*.
 - a. If you select *On*, enter the number of modules for this location and select the module serial number(s). The options are:

Select	Description
Number of Sections	Number of sections assigned to the module
Control Type	The Boom Valve where the section control module sends power to the section valve to turn the clutch on is the most common for sprayers.
Turn Off When Stopped	If yes, the sections turn off when stopped.

- b. If required, set up additional section control operations. The options are:

Select	Description
Latency	<p>On: Length of time between when the command to turn sections on and application actually begins.</p> <p>Off: Length of time between when the command to turn sections off and application actually ends.</p>  <p>Latency Command given to turn off</p>

Select	Description
Overlap	<p>Start Overlap: The amount of intentional overlap when going into a non-covered section of the field.</p> <p>End Overlap: The amount of intentional overlap when going into a previously covered area.</p>  <p>Coverage Switching Overlap: The amount of side-to-side coverage overlap before a section shuts down.</p> <p>1% 99%</p>  <p>Boundary Switching Overlap: The amount of side-to-side boundary overlap before a section shuts down.</p> <p>1% 99%</p> 
Coverage Allowable Rate Error	Coverage allowable rate error.

- c. If required, set *Fence Nozzles*. If Right or Both is selected, the option for Right Nozzle Wiring appears. Select the wiring configuration of your sprayer to ensure control of the correct section for right fence nozzle:



EZ-Boom (+1)
Field-IQ (12")

1	2	3	4	5	6	7
1	2	3	4	5	6	12

7. Set up *Rate Control*.

- a. If *On*, enter the number of drives for this location and select the module serial number(s). If there is more than one module, select the width associated with the module.

- b. In *Drive Setup*, complete the *Valve Setup*. The options are:

Select	Description
Valve Type	<ul style="list-style-type: none"> Servo: Standard 2-wire servo, performs more slowly. Servo Fast: Fast 4-wire servo, performs more quickly. PWM: 2-wire PWM valve, commonly used to control hydraulic flow to the pump. Hardi % Bypass Servo: Used on Hardi sprayers equipped with 3-way section valves that return flow to the tank when the boom section is off. Pump Servo: Servo valve commonly used to control hydraulic flow to the pump. Electric Over Hydraulic: A valve that uses electric current to control the hydraulic valve output.
Plumbing	<p>Set the valve plumbing for servo-type valves only (that is, Servo, Servo Fast, and Hardi % Bypass Servo).</p> <p>Note – Pump Servo does not have a plumbing type as it controls hydraulic flow to the pump. This is similar to a PWM setup.</p> <p>The options are:</p> <ul style="list-style-type: none"> Inline: The control valve is between the pump and the sections/nozzles. This means that the control valve controls the amount of material out to the section/nozzles directly. <p>Note – To increase the amount of material that is sent to the section/nozzles, the control valve must open more in order to force more material to the sections/nozzles.</p> <ul style="list-style-type: none"> Bypass: The control valve is between the pump and the tank. This means that the control valve controls the amount of material that goes back to the tank. <p>Note – To increase the amount of material that is sent to the section/nozzles, the control valve must close more in order to force more material to the sections/nozzles.</p>
Auxiliary Valve	Disabled, Master, or Dump
Pump Disarming Switch	Disabled or Enabled

c. Also in *Drive Setup*, complete the *Feedback Setup*:

Select	Description
Flow Meter Type	The options are: <ul style="list-style-type: none"> • Raven • Trimble Navigation Limited Other • Other • Other (per cu in)
Flow Meter Units	The options are: <ul style="list-style-type: none"> • Pulses/gallon • Pulses/liter
Flow Meter Calibration	Enter the value on the meter if available. This value will be updated following flow meter calibration.
Minimum Flow	The system minimum flow that is maintained when the rate is going to be below this value.

d. In the *Rate Control Setup*, set up the *Tank/Bin* if required:

Select	Description
Status	When on, the system will track the tank level and provide warnings.
Capacity Units	Select units.
Capacity	The total volume of the tank.
Current Volume	The volume of material currently in the tank.
Partial Refill	The amount of a partial refill.
Warning Level	The amount of material that triggers a low material warning.

e. In the *Rate Control Setup*, enter the *Number of Nozzles*.

8. Set up *Sensors*. The most common sensors are pressure, speed, and bin/tank.

Select	Description
Sensor Name	Enter a name for the sensor.
Module Assignment	Serial number of the module the sensor is connected to.
Input Location	<i>Applies to Pressure Sensors Only.</i> Location the pressure sensor is connected to on the module.
RPM Calibration	<i>Applies to RPM Sensors Only.</i> The pulse per revolution for the sensor.
Alarm on Change	<i>Applies to Bin Sensors Only.</i> <ul style="list-style-type: none"> • Low to High: The alarm is triggered when the module sees the sensor go from 0 V to 12 V. • High to Low: The alarm is triggered when the module sees the sensor go from 12 V to 0 V.
Alarm Text	<i>Applies to Bin Sensors Only.</i> Enter the text to be displayed when the alarm is triggered.

CALIBRATION

1. In the *Application Control* screen, tap **Calibration**.
2. Select the *Location* you set up earlier.
3. Select *Implement Lift Calibration*, if applicable, and follow the steps on the screen
4. Select *Rate Control and Drive Calibration* and follow the steps on the screen.
5. Select *Rate Control and Flow Calibration* and follow the steps on the screen.
6. Select *Sensor(s)* and calibrate accordingly.


Calibrate Maximum Flow

During calibration, the maximum flow value is required. This is calculated as follows:

(boom width in feet) x (ground speed in mph) x (application rate in gpa) x 0.00202

Changing the Minimum Override Speed

To change the Minimum Override Speed at which the system will continue to run at if the vehicle drops below this speed:

1. From the Run screen, tap **Settings**.
2. Select *Implement*.
3. Select *Application Control*.
4. Select *Material Setup*.
5. Select your previously set up material and then tap **Edit**.
6. On the *Material Management* screen, tap .
7. Select *Minimum Override Speed* and then enter the required value.

Saving your current configuration

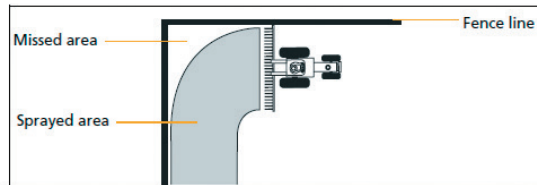
To save your current configuration, including all settings and calibration information:

1. From the Run screen, tap **Settings**.
2. Select *System*.
3. Select *Advanced*.
4. Select *Save/Load Configurations*.
5. Select *Save Current Configuration*.
6. Save the configuration to the internal memory (to reload if unwanted adjustments are made) or to a USB drive (to have an external backup and be able to move between displays).

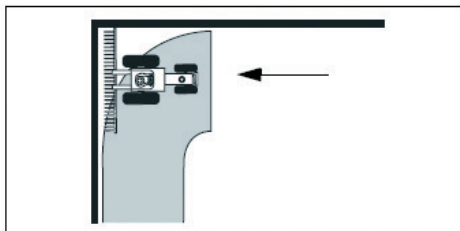
Note: To load a saved configuration, follow this procedure, but select *Load a Configuration* in Step 5.

SPRAYING CORNERS

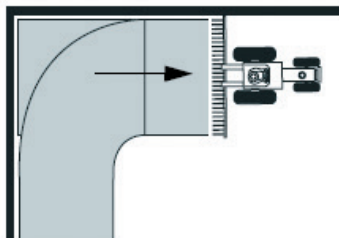
1. Drive around the corner.
2. When you have passed the corner and straightened up, stop the vehicle:



3. Switch the Section Control Switch on the Master Switch box to Manual and the Master Switch to Off.
4. Reverse the vehicle until the spraying implement is at the field boundary:



5. Hold Master Switch on the Master Switch Box at Jump Start position and begin driving.
6. When up to speed, release Master Switch and set at ON position.
7. When pass the previously covered area, switch the Section Control Switch on the Master Switch Box back to Automatic:



OPERATION

Once you have enabled, configured and calibrated your Field-IQ crop input control system, the Run screen appears (see page 1). This allows you to control the application.

The LED has the following status indicators:

- Green – The unit is powered and is communicating with the CFX-750 display.
- Yellow – The unit is initializing communications with the CFX-750 display.
- Red – The unit is powered but not communicating with the CFX-750 display.

Field-IQ master switch box

All systems must have a Field-IQ master switch box.



	Switch	Functions
❶	Increment/ decrement	Increases the applied amount by a set amount (to set this amount, go to <i>Material Setup / Application Rate Setup / Rate</i>).
❷	Rate	Choose preset Rate 1, preset Rate 2, or Manual.
❸	Automatic/ Manual	Automatic mode – Sections automatically turn on and turn off sections when entering areas of overlap, non-apply zones, or crossing boundaries. Manual mode – Sections are controlled manually.
❹	Master	A. Jump start. The system is overridden to use preset control speed. Use if you lose a GPS signal or want to start applying before the implement is up to speed. B. On. Sections and rate ready to be commanded by the display. C. Off. Sections are closed, rate set to zero.

Field-IQ 12-section switch box

The 12-section switch box is required for section control. For rate control only, the switch box is optional.



Only one section switch box can be used on each system. Each section switch is automatically assigned to the corresponding module. The modules are read from left to right. For example, switch 1 assigns to the module furthest on the left when standing behind the implement.

The section switches have different functions, depending upon the status of the master Automatic/Manual section switch on the master switch box.

If the section control switch on the Master Switch Box is set to ...	and an individual section switch position on the 12-section switch box is ...	then ...
Automatic	Up / On	the section is controlled by the display.
	Down / Off	the section is off.
Manual	Up / On	the section is turned on.
	Down / Off	the section is off.

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