*Ag*GPS® FieldManager™ Display Multi-Application Control Quick Reference Card

INTRODUCTION

This *Quick Reference Card* describes how to configure the *Ag*GPS® FieldManager™ display for seed planting, granular fertilizer spreading, liquid spraying, granular seed planting, or anhydrous application.

CONFIGURATION STEPS

To configure the Multi-Application Control system, open the *Configuration* screen and then complete the following steps:

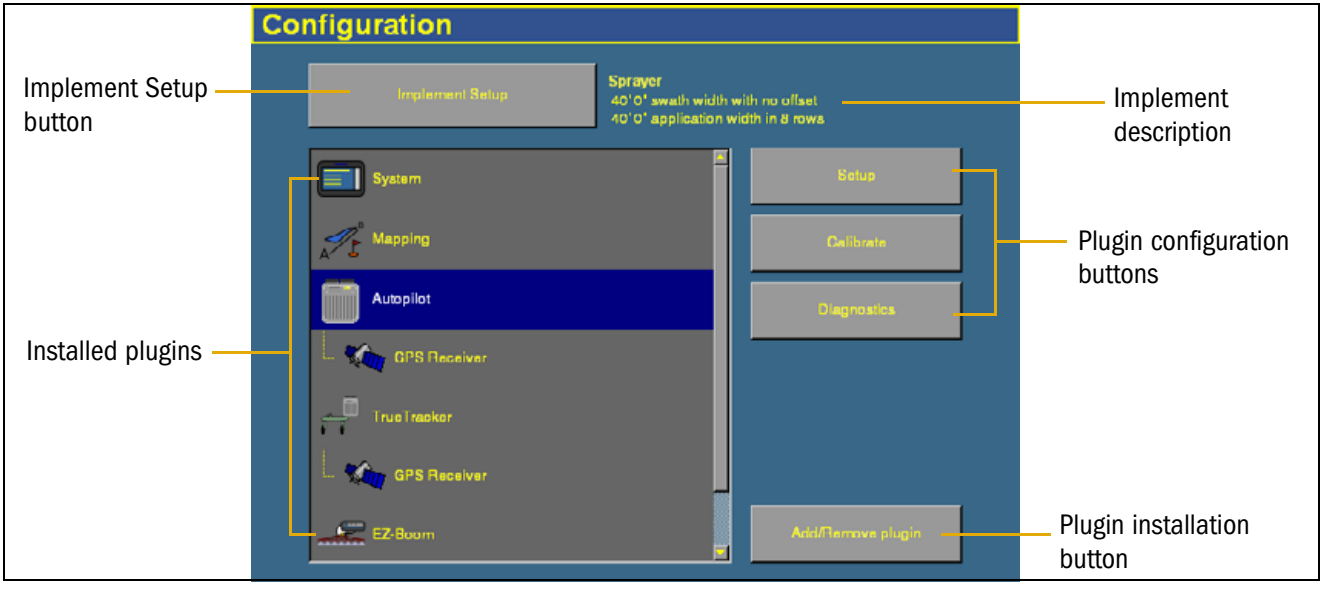
1. Install the *Multi-Application Control* plugin.
2. Configure the implement.
3. Configure the modules.
4. Configure the row sensors.
5. Configure the materials.
6. Assign the materials to channels.
7. Configure additional sensors.
8. Calibrate the channels and sensors.

For a more detailed description of these steps, refer to the *AgGPS FieldManager Display User Guide*, version 5.10.

ACCESSING THE CONFIGURATION SCREEN

The *Configuration* screen of the *Ag*GPS FieldManager display enables you to configure the system:

- From the right of the screen, press the Configuration button  . The *Configuration* screen appears:



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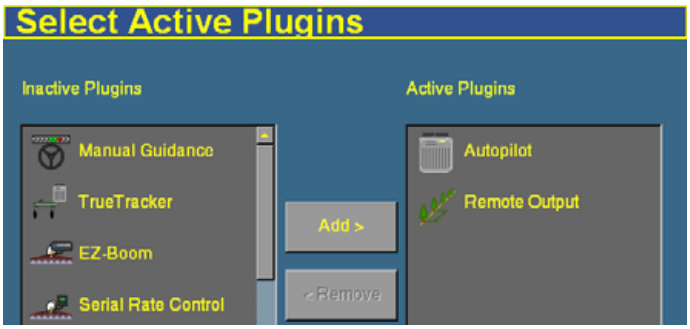
STEP 1. INSTALLING THE MULTI-APPLICATION CONTROL PLUGIN

The FieldManager display version 5.10 uses a series of ***plugins*** to control which parts of the system are installed. For example, to add the *Ag*GPS Autopilot™ automated steering system functionality, install the Autopilot plugin. Then you can configure the Autopilot settings so that you can use the Autopilot controls from the Run screen.

Note — To install the Multi-Application Control plugin, you must purchase an upgrade for the display.

To enable multi-application processes, install the Multi-Application Control plugin:

1. From the *Configuration* screen, tap **Add/Remove Plugin**.
   If necessary, enter the Administration password and then tap **OK**.
   In the *Select Active Plugins* screen:
   - The plugins that are currently installed appear in the *Active Plugins* list on the right.
   - The plugins that are ***not*** currently installed appear in the *Inactive Plugins* list on the left.
2. If the *Multi-Application Control* plugin is not currently installed, select it and then tap **Add >**. The plugin moves to the *Active Plugins* list.
3. Tap **OK**. The *Configuration* screen reappears.



STEP 2. CONFIGURING THE IMPLEMENT

1. From the *Configuration* screen, tap **Implement Setup**. The *Edit Implement* screen appears.
2. To create a new implement, tap **New** and then enter a name for the implement.
3. Ensure that the new implement is showing in the *Current Implement* list and then tap **Settings**. The *Implement Boom Setup* screen appears.
4. From the *Type* list, select whether the implement is a 3-point hitch or a drawbar.
5. In the *L/R Offset* window, enter the distance that the implement is offset to the left or the right. If the implement is centered, leave it as 0.
6. In the *F/B Offset* window, enter the distance from the tractor antenna to the implement boom or seeding units.
7. In the *Application Width* window, enter the width of the implement.
8. Adjust the *Swath Width* setting, if necessary:
   - If you enter a value that is higher than the *Application Width* value, there will be skips in the coverage.
   - If you enter a value that is lower than the *Application Width* value, the coverage will overlap.
9. In the *Rows* window, enter the number of rows on the implement.
10. Tap **OK**.

The implement is configured.

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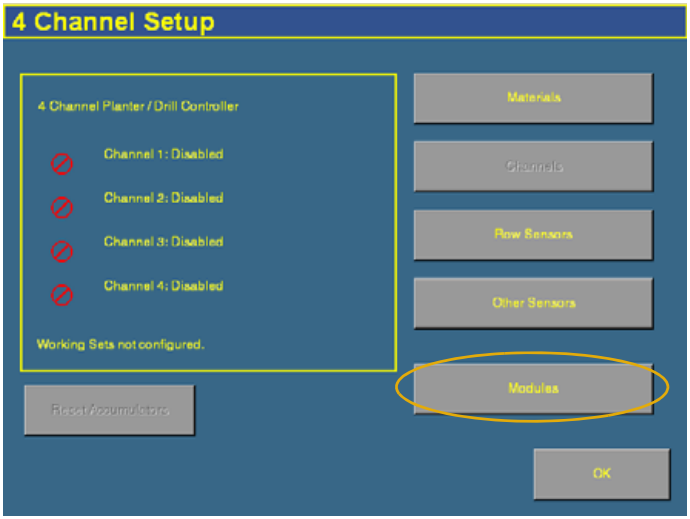
STEP 3. CONFIGURING THE MODULES

In this step, configure the modules that are connected to the system. These modules control the sections on the implement.

1. From the *Configuration* screen, select the *Multi-Application Control* plugin and then tap **Setup**. The *4 Channel Setup* screen appears:



2. Tap **Modules**. The *Multi-Application Control Setup* screen appears.
3. Tap **Auto Config**. The modules are automatically detected.
4. Adjust the order of the modules, if necessary. For ease of setup, arrange the modules both physically and in the software in order of serial number.
5. Select each module and then configure the settings.
6. Tap **OK**.

STEP 4. CONFIGURING THE ROW SENSORS

When you configured the implement, you specified the number of rows. In this step, you set the pattern of the row sensors. If you do not require row monitoring, or you are using a sprayer, spreader, or anhydrous unit, go to Step 5.

1. From the *4 Channel Setup* screen, tap **Row Sensors**. The *Row Sensor Setup* screen appears.
   The rows appear in the *Rows* list. If there are more rows than sensors, some of the rows will appear without sensors.
2. Use one of the following methods to configure the rows:
   - Tap the row icons in the *Rows* list to adjust their setting. Tap each icon until it represents the row and sensor setup.
   - Use the *Pattern* list to create a pattern for the rows. Press  to add sensors to the *Pattern* list, tap each icon to adjust it and then tap **Apply** to apply the pattern to the *Rows* list.
3. Tap **OK**.

The rows are configured.

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STEP 5. CONFIGURING THE MATERIALS

Configure the materials that you will apply. These may be different types of seed, fertilizer, liquid, or anhydrous, depending on the application.

1. From the *4 Channel Setup* screen, tap **Materials**. The *Material Setup* screen appears.
2. To enter a new material:
   a. Tap **New** and then enter a name for the material.
   b. Ensure that the material is selected in the list on the left of the screen.
   c. In the *Type* list, select the type of application. It can be Planter, Liquid Flow, Granular Seed, Granular Fertilizer, or Anhydrous.
3. To configure the rates at which the material will be applied, tap **Application Rates**. The *Application Rate Setup* screen appears. The options available on the screen change depending on the application type:

For this application type...	Enter the...	To define...
Planter/Liquid/Gr Seed/Gr Fert/Anhy	Minimum Rate	the lowest rate that the system will allow you to select.
Planter/Liquid/Gr Seed/Gr Fert/Anhy	Maximum Rate	the highest rate that the system will allow you to select.
Planter/Liquid/Gr Seed/Gr Fert/Anhy	Increment/Decrement	the percentage that the application rate will change when you manually adjust the rate.
Planter	Seeds per revolution	the number of seeds being planted per rotation of the seed disks.
Planter	Disk RPM Low Limit	the lowest disk RPM at which control channel will operate.
Planter	Disk RPM High Limit	the highest disk RPM at which control channel will operate.
Liquid Flow	Low Flow Limit	the lowest rate at which the system will operate.
Liquid Flow	High Flow Limit	the highest rate at which the system will operate.
Granular Seed/Granular Fertilizer	Density	the weight per volume of the material (if unknown, use 1).
Granular Seed	Seeds per Pound	the number of seeds per pound.
Granular Seed	Low Shaft RPM	The lowest shaft speed at which the control channel will operate.
Granular Seed	High Shaft RPM	The highest shaft speed at which the control channel will operate.
Granular Seed/Granular Fertilizer	Spreader Const	the number of app rate sensor pulses per liter (cubic ft) of material.
Granular Fertilizer	Low RPM Limit	The lowest shaft speed at which the control channel will operate.
Granular Fertilizer	High RPM Limit	The highest shaft speed at which the control channel will operate.

4. Add a new preset rate:
   a. Tap **Add**.
   b. Enter the preset rate. You will be able to select this rate for the material on the Run screen.
   c. To add additional preset rates, repeat Steps a and b. You can add up to 8 preset rates that are accessible from the Run screen.
   d. Tap **OK**. The *Material Setup* screen reappears.

5. Set the alarm levels:
   a. From the *Material Setup* screen, tap **Alarms**. The *Alarms Setup* screen appears. The options available on the screen change depending on the application type:

For this application type...	Enter the...	To define...
Planter/Granular Seed	High Population Alarm	what percentage over the preset rate will trigger a warning.
Planter/Granular Seed	Low Population Alarm	what percentage under the preset rate will trigger a warning.
Planter/Granular Seed	High Alarm Delay	the delay before the high population warning appears.
Planter/Granular Seed	Low Alarm Delay	the delay before the low population warning appears.
Planter/Granular Seed	Min Row Fail Rate	the acceptable failure rate before the Row Fail alarm is triggered.
Planter/Liquid/Gr Seed/Gr Fert/Anhy	Product Level Alarm	the level of product that will trigger the low product level alarm.

   b. Tap **OK**.

The material is now configured. Repeat this process to add another material.

STEP 6. ASSIGNING THE MATERIALS TO CHANNELS

When the materials are entered, assign them to channels. Multiple channels enable you to control the application separately.

CAUTION — Ensure that the channels that you configure match the hardware configuration on the implement. For example, set up PWM1/FB1 as Channel 1. For more detail, refer to the cabling documentation.

1. From the *4 Channel Setup* screen, select the channel to configure from the list on the left of the screen and then tap **Channels**. The *Channel Setup* screen appears.
2. From the *Material* list, select the material. For Anhydrous application, go to number 5 in this section.
3. In the *Control Mode* list, select how the control channel will calculate application rates:

Item	Description
Auto	The control channel automatically calculates application rates and adjusts them according to speed under normal operating conditions.
Manual with Feedback	Overrides the current system when not operating correctly. When you tap the Increase or Decrease buttons on the Run screen, you adjust the Control Channel PWM % rate. The system shows the actual application rate being applied.
Manual without Feedback	Overrides the current system when not operating correctly. When you tap the Increase or Decrease buttons on the Run screen, you adjust the Control Channel PWM % rate. No application rate feedback is displayed.

4. Enter the *Precharge/Delay* time. The Precharge time is the length of time that a control channel will operate or be active when there is a minimum Precharge ground speed of greater than 1.

   Typically, the Precharge feature is used in applications with a significant distance between the storage bulk fill tank and the implement row unit, where seed/fertilizer travel time takes several seconds. The feature operates until the Precharge time lapses or the Precharge ground speed is exceeded. If ground speed stops while in Precharge mode, the Precharge feature aborts. Any time the Preset feature is established or changed and the Master Switch is turned on, a Precharge alarm appears.

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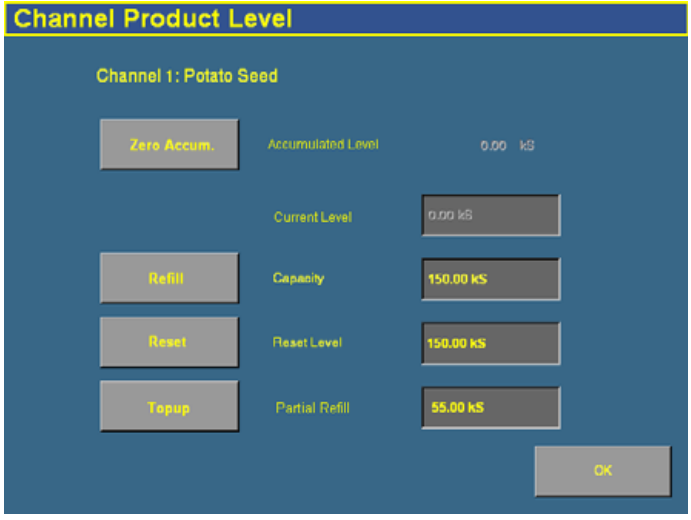
After the master switch is turned on and the implement switch is lowered, the system waits for the ***delay time*** before the control channel starts operating. When the implement is raised or the master switch is turned off, the system immediately shuts down the channel.

5. Configure the channel:
   a. Tap **Configuration**. The *Channel Configuration* screen appears:

For this application type...	Enter the...	To define...
Planter/Liquid/Gr Seed/Gr Fert/Anhy	Drive Type	the drive type hardware (PWM, Servo, or Servo Return).
Planter/Liquid/Gr Seed/Gr Fert/Anhy	Drive Frequency	the drive frequency. (If you are using a DICKEY-john valve, leave this setting as the default).
Planter/Liquid/Gr Seed/Gr Fert/Anhy	Input Filter	the amount of filtering applied to the feedback frequency. Do not change this setting unless instructed to by Technical Support.
Planter/Gr Seed/Gr Fert	Sensor Constant	the number of pulses per revolution of the sensor. If you use a DICKEY-john application rate sensor, set the constant to 360.
Planter/Gr Seed/Gr Fert	Gear Ratio	how many times the application rate sensor turns for each turn of the seed disk/metering shaft.
Planter/Gr Seed	Number of Rows	the number of rows assigned to the channel.
Liquid/Anhydrous	K-Factor	the number of pulses per liter (gallon) that the sensor produces.
Planter/Liquid/Gr Seed/Gr Fert/Anhy	Channel Width	the combined width assigned to this channel.
Liquid	Flush	whether Flush mode is enabled.
Liquid	Valve Locking	whether the valves lock in their operating position at boom shutoff.
Anhydrous	Measurement Unit	the unit of measure that is displayed: N (Nitrogen) or NH3 (Anhydrous Ammonia).
Anhydrous	Max Flow Rate	the maximum rate at which the implement can apply anhydrous ammonia.

   b. Tap **OK**.
6. Enter the product level information:
   a. Tap **Product Level**. The *Channel Product Level* screen appears.
   b. In the *Capacity* window, enter the amount of product that the implement channel holds.
   c. In the *Reset Level* window, enter the partial level if you partially refill to a point.
   d. In the *Partial Refill* window, enter the amount that you will add if you perform a partial refill in the field.
7. Tap **OK**.

The channel is configured. Repeat this process for any additional channels.



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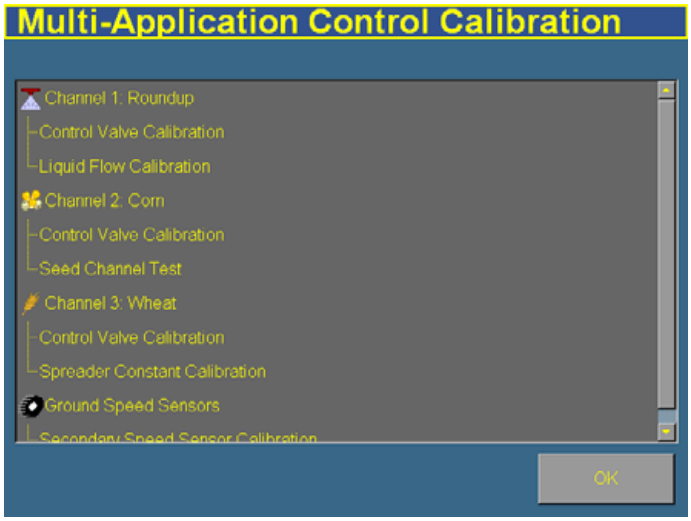
STEP 7. CONFIGURING ADDITIONAL SENSORS

1. From the *4 Channel Setup* screen, tap **Other Sensors**. The *Other Sensor Setup* screen appears.
2. Select each of the additional sensors and then configure it.
   For more information on individual sensor configuration settings, refer to the *AgGPS FieldManager Display User Guide*.

STEP 8. CALIBRATING THE CHANNELS AND SENSORS

1. From the Configuration screen select the Multi-Application Control plugin and then tap **Calibrate**. The *Multi-Application Control Calibration* screen appears.
2. Select each sensor and then follow the onscreen instructions.

WARNING — During some calibration sequences, the implement will become operational. Take all necessary precautions to ensure user safety. Failure to do so may result in serious injury or death.



PARTS OF THE RUN SCREEN

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Application tab

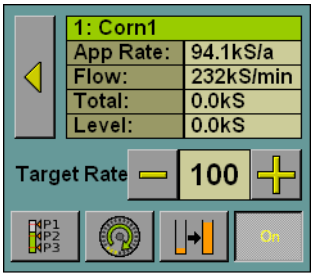
Most plugins have their own tab. The highlighted tab is for the Multi-Application Control plugin.

Implement lift switch indicator and Logging button

- You can install an optional implement lift switch. This indicator shows whether the implement is raised or lowered.
- You must install an implement master switch that turns the implement on or off. The implement master switch is linked to the **Logging** button. When you engage logging, the implement turns on.

Channel details buttons

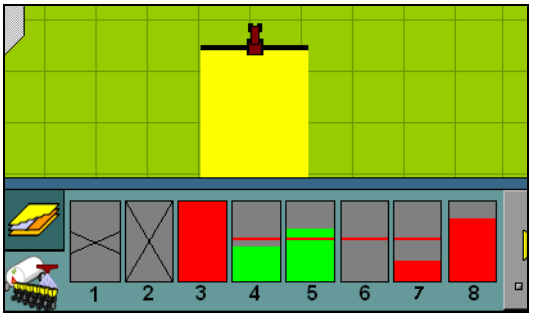
When you tap a channel details button  , detailed information about that channel appears. On the details tab, you can:



- adjust the Target Rate (either manually  or with the preset rates )
- turn the channel on or off 
- adjust the quantity of material 
- precharge the disk  or initiate flush  .

Information tab

The information tab shows the Multi-Application Control system's row and sensor details. To view row details, press  :



Row #	Description
1	Row is off by clutch
2	Row is off by channel
3	Row is blocked or failed
4	Row is operating (slightly below the target rate line)
5	Row is operating (slightly above the target rate line)
6	Row is passive (master switch is off)
7	Row is operating (but below the acceptable bounds)
8	Row is operating (but above the acceptable bounds)