

# XCN-1050 Display System

## Quick Reference Card

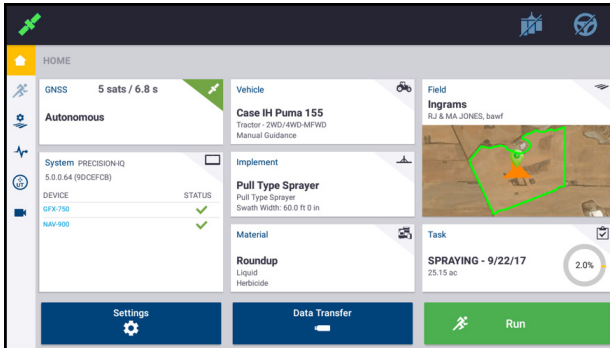
The XCN-1050™ display is a touchscreen platform for precision agriculture.

### THE PRECISION-IQ HOME SCREEN

Tap the Precision-IQ™ icon to launch the application:



The Home screen displays by default:




**Emergency Stop** - Tap the Emergency Stop icon from any screen to stop all activities controlled by the display.

### BEFORE YOU BEGIN - SETUP PROCEDURES

Check the System details to ensure all equipment you have connected appears in the list and with a green check. Before you enter the Run screen to complete any work, these items must be set up:

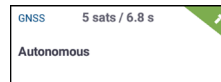
- GNSS
- Vehicle
- Implement
- Material
- Field
- Task

*Note: A warning symbol  next to an entry field means the value is missing or incorrect. Make a valid entry to clear the warning.*

### GNSS Setup

To configure your GNSS setup:

1. From the Home screen, tap the **GNSS** tile:



By default, GNSS is set up for **Autonomous** correction.

2. Tap **Edit** to set options for Corrections, CAN Messaging, and NMEA Messaging. Your selections are automatically saved.
3. When you are satisfied with your changes, tap **Home** or the Android **Back** button to return to the Home screen.

## Vehicle Setup

To configure a vehicle:

1. From the Home screen, tap the **Vehicle** tile:

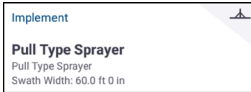


2. Tap **New** to launch the vehicle creation wizard. From here, you can select a vehicle type, the vehicle make and model, and a variety of available guidance options.
3. When you have completed the vehicle configuration, tap the **Save** icon to save your vehicle and return to the Vehicle selection screen.
4. Tap **Home** or the Android **Back** button to return to the Home screen.

## Implement Setup

To configure an implement:

1. From the Home screen, tap the **Implement** tile:

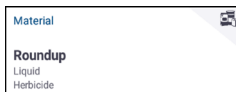


2. Tap **New** to launch the implement creation wizard. From here, you can select from a variety of implement types.
3. Tap an implement icon to select an implement.
4. Some implements (Planting, Seeding, Spraying), apply materials (seed, fertilizer, pesticide, etc.). For these implements, tap **Next** to set the Application Control type and number of channels.
5. When you have completed the implement configuration, tap the **Save** icon to save your implement and return to the Implement Selection screen.
6. Tap **Home** or the Android **Back** button to return to the Home screen.

## Material Setup

To configure a material:

1. From the Home screen, tap the **Material** tile:



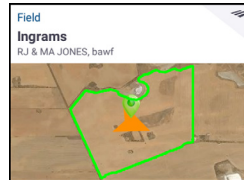
2. Tap **New** to launch the material creation wizard.
3. Complete the form for the material:
  - Create a unique name for the material.
  - Select a category (Anhydrous, Granular Seed, etc.).
  - Depending on the category, select the material type associated with the category. For example, if you select Granular Seed as the category, then select a seed type, such as Barley, Corn, Oats, Peanuts, etc.
  - Select the distribution type for the material. For example, the amount of a material (pound, liters, gallons) per area (acre, hectare).
  - Set values for the distribution rates.
  - *(Optional)* Tap Material Details to enter values for the material's product number and manufacture.
4. Tap the **Save** icon to complete the material creation and return to the Materials screen.
5. Tap **Home** or the Android **Back** button to return to the Home screen.

**Note** - Any material you create must correspond to the appropriate implement. A material will only be available for selection only for those implements that can apply it.

## Field Setup

To create a field:


1. From the Home screen, tap the **Field** tile:



2. Tap **New**.
3. In the Create New Field pop-up window, enter a unique Field Name. From the Android keyboard, tap **Done**.
4. Verify that the field name is correct, and tap **OK**.

Alternatively, you can transfer existing field data files directly to the XCN-1050 display:

1. Insert a USB drive into the USB port of the XCN-1050 display.

- On the Home screen, tap **Data Transfer**.
- On the Data Transfer screen
  - The left side of the screen (labeled **Internal**) shows the data files currently available on the XCN-1050 display.
  - The right side of the screen (labeled **USB**) shows the data files of the USB drive.
- From the USB region, tap **Fields** to expand the menu and display all available fields.
- Tap the select box for the Fields category to transfer all fields or tap the select box for each field to transfer individually. Then tap the left transfer icon  in the center of the screen to complete the transfer.
- Tap **Home** or the Android **Back** button to return to the Home screen.



**Caution** - Take care when setting up these details. The values you set in these steps are critical for the data integrity recorded for the Run screen.

## BEFORE YOU BEGIN - SELECTION PROCESS

Before you can enter the Run screen, you must select the items that have been previously set up and select a valid task.

*Note - The GNSS is already selected for this process.*

### Select a Vehicle

By default, the last vehicle added is selected. If you need to select a different vehicle:

- From the Home screen, tap the **Vehicle** tile:
- Tap a vehicle from the selection list. The Vehicle screen will update to show the relevant details about the vehicle.
- Tap **Select Vehicle**:



Allow up to 45 seconds for the vehicle profile to be updated. During this time, some functions will be disabled.

- Tap **Home** or the Android **Back** button to return to the Home screen.

### Select an Implement

To select an implement:

- From the Home screen, tap the **Implement** tile:



- Tap an implement from the list of implements that have been previously set up. The Implement screen will update to show details about the selected implement.
- Tap **Home** or the Android **Back** button to return to the Home screen.

**Note** - You **must** select an implement before you can select a material or task.

### Select a Material

To select a material:

- From the Home screen, tap the **Material** tile:



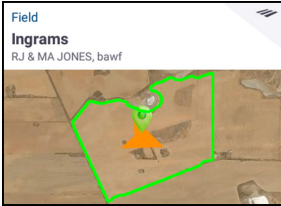
**Note** - If the selected implement does not apply a material (for example, tilling or subsurface drainage implements), then no material will appear on the Materials screen. For these types of implements, you can skip this section.

- From the list of available channels, **Channel 1** is selected by default.
- From the list of available materials, tap a material to select it. The Materials screen will update to show details about the selected material.
- Tap **Home** or the Android **Back** button to return to the Home screen.

## Select a Field

To select a field:

1. From the Home screen, tap the **Field** tile:



2. From the list of available fields, tap a field to select it. Alternatively, you can tap the Search field to search for a specific field or tap a field marker on the interactive map.
3. Tap **Home** or the Android **Back** button to return to the Home screen.

## Select a Task

A task is generated based on previously selected details. To create a task:

1. From the Home screen, tap the **Task** tile:



2. Tap **New**. A Create New Task pop-up window will display with a valid task with the current date (for example, *SPRAYING - 9/22/17*).
3. If necessary, you can edit the task name and date. Tap **OK**.
4. Tap **Home** or the Android **Back** button to return to the Home screen.

**Note** - You **must** select a field before a task can be assigned.

## THE RUN SCREEN

Once all items have been set up and selected, review your selections on the Home screen. Tap the green **Run** button to enter the Run screen and start your task.

The Run screen is where you perform all field activities.



While in the Run screen, Precision-IQ records all field activity (vehicle performance, material application, field coverage, etc.). Data collected can be transferred to your office where your farm is managed.

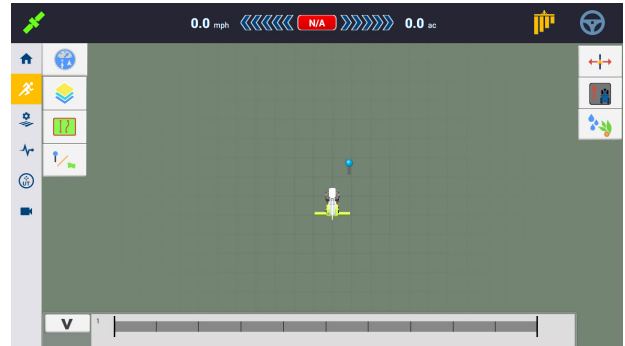
### Change Vehicle Perspective

Tap the vehicle icon in the center of the Run screen to display the vehicle perspective section list.

Tap the icons to:



- Toggle to rotate to an overhead view or a perspective view.
- Toggle to orient the map to always point north.
- Zoom back to the vehicle.



### Ending a Run

Once you have completed your field run, tap the **Stop** button on the Home screen to stop the current operation task:



## GUIDANCE MAPPING

The following sections show some common guidance mapping procedures. For a full list of guidance options, see the reference manual.





### Auto Close

To use auto close for boundaries and headlands:

1. On the Home screen, tap **Settings** and then tap **Patterns**.
2. At the Boundaries and Headlands sections, turn on auto close. You can also set the auto close distance in these sections.




### Create a Boundary

This pattern lets you define the boundary of the field, which can contain a variety of guidance lines within it.

1. In the Run screen tool bar, tap .
2. Tap .
3. When you are ready to begin recording the boundary, tap .
4. Drive the boundary of your field.
5. To complete the boundary:
  - Drive within auto-close distance. The system automatically closes the area if you have auto-close turned on.
  - Drive to the end of the boundary and tap  if you do not have auto-close turned on.


### Create a Headland

Use the Headland pattern to complete the infield and to give you room to turn.

1. In the Run screen tool bar, tap .
2. Tap . A popup displays indicating circuit and infill options.
3. Set or accept the number of circuits you want.
4. Optionally, indicate the type of guidance line you want for infill.
5. Tap  to begin recording the headland.




If you are creating an infill pattern, refer to the AB, A+ or curved line sections.

6. To close the headland area:

- Drive within auto-close distance. The system automatically closes the area if you have auto-close turned on.
- Drive to the ending boundary of the headland and tap  if you do not have auto-close turned on.





### Create a Pivot

Use the Pivot pattern on fields that are irrigated using a center pivot. With this pattern, you can drive concentric circles around the center pivot.

1. Tap .
2. When you are ready to begin recording the pivot, tap .
3. Drive the boundary of your pivot area.
4. Tap .





### Create an AB Guidance Line

The simplest form of line, use it when you do not need to define headlands and you want to drive the field in parallel straight lines.

1. Tap .
2. When you are ready to begin recording the line, tap  and begin driving.
3. When you are at the end of the line, tap  to stop recording.
4. Tap  to save the line.




### Create an A+ Directional Guidance Line

Similar to the AB guidance line. Useful for when you need guidance exactly parallel to the last AB line (for example, driving adjacent fields, skipping and access road in a field).

1. Tap .
2. To set the direction of the line, you can do any of the following:
  - Lock the vehicle's current direction by tapping .
  - Enter degrees for the direction.
  - Tap a direction on the compass .
3. When the direction you want is set, tap .




## Create a Curved Line

Use the Curve pattern when you want to work the field with gentle curves.

1. Tap .
2. When you are ready to begin recording the line, tap .
3. When you are at the end of the line, tap .


## Create a Landmark Line

Use this line to identify continuous elements of your field to be avoided, such as a fence, ditch, access road, etc.

1. Tap .
2. When you are ready to begin recording the line, tap .
3. When you are at the end of the line, tap .





## Create a Landmark Point

A Landmark Point identifies singular elements of your field to be avoided, such as a tree, rock, etc.





























When you are driving and want to create a landmark point, tap .

## Create a Landmark Area (productive or non-productive)

The Landmark Area allows you to identify an entire region to be avoided, such as a pond, marsh, or area that does not need to be worked again.

1. For a productive area, tap ; for a non-productive area, tap .
2. Tap .
3. Drive to the ending boundary of the area and then tap .

## COMMON PRECISION-IQ ICONS

Activity Bar Icons						Run Screen Icons			
									
Home	Run	Field Manager	Diagnostics	Universal Terminal	Camera	Widgets Menu	Layers	Boundaries	Landmarks
Guidance Pattern Boundaries, Patterns, and Lines Icons						Landmark Icons			
									
Boundary	Headland	Pivot	AB Line	A+ Line	Curve	Point	Line	Area	Non-productive area
Recording Buttons									
									
Record	Set A	Set B	Complete	Pause	Cancel	Use current heading	Compass controls		

## DATA TRANSFER

All data collected by Precision-IQ can be transferred to the desktop software. After you have completed your run, Precision-IQ has collected a variety of details that need to be transferred to your back office. This data is used to efficiently and effectively manage your farm.

You can transfer this collected data **automatically** using a cellular or Wi-Fi connection or **manually** using a USB drive.

*Note - For complete details about Data Transfer, see the reference manual.*

### Automatic Data Transfer

If your Precision-IQ hardware configuration includes a wireless modem, then you can transfer the data files automatically.

1. On the Android Launcher screen, tap **Settings**:



2. On the Android Settings screen, tap **Wi-Fi** to display an available list of wireless networks. Tap the appropriate network (you may need to enter a user name and password). Tap **Connect**. Verify that you are connected to the network.

3. From the Precision-IQ Home screen, tap the **Settings** button:



4. On the Settings screen, tap **Office Sync**. Then tap the **On** switch to enable the wireless transfer feature.
5. By default, Precision-IQ checks the connectivity to your wireless network every 10 minutes, and can send any collected data to your office every hour. You can modify these settings on this settings screen.
6. Tap the Android **Back** button to return to the Home screen.

Once enabled, Precision-IQ automatically sends the collected data files to your farm office.

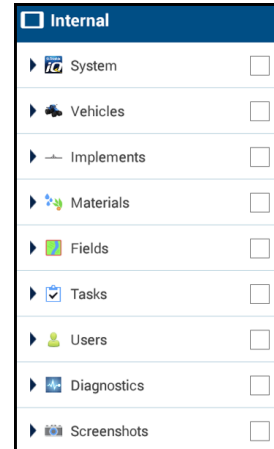
### Manual Data Transfer


If your Precision-IQ hardware configuration does not include a wireless modem or hot spot or if you have opted to disable Office Sync, then you will need to transfer the collected data files manually.

1. After you have completed your run, insert a USB drive into an available USB port on the XCN-1050 display.
2. On the Precision-IQ Home screen, tap the **Data Transfer** button:



3. On the Data Transfer screen, you have a variety of data types to transfer:

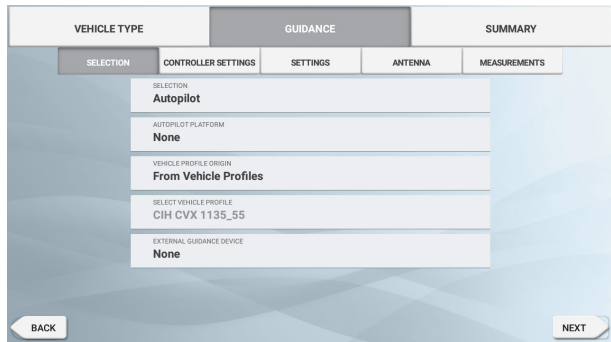


4. Tap an item to expand to select individual components (for example, select one or more vehicles). Or tap the selection box for the item to select all of the individual components of the item.
  5. Once you have made your selections, tap the blue transfer button:
- 
6. The selected files are transferred to your connected USB drive.
  7. Once the transfer is complete, tap the Android **Back** button to return to the Home screen.

## ADVANCED SETTINGS: VEHICLE AUTO GUIDANCE

With the appropriate licenses unlocked and installed, you can configure a vehicle to use an auto guidance system. When you set up a vehicle, **Manual Guidance** is selected by default. On the Guidance step of the vehicle setup, tap the **Selection** field, then tap **Autopilot** in the Selection pop-up window.

The Guidance screen will update for you to configure the Autopilot details:



Tap the appropriate field to change or enter the guidance value. Tap **Next** to complete each Guidance option.

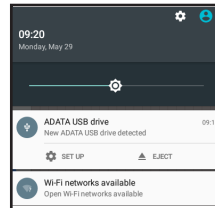
*Note - These guidance options will vary depending on the auto guidance license you have installed.*

If you need to change the auto guidance options, tap **Vehicles** on the Home screen, tap the vehicle you want to update, and then tap **Edit**. Tap **Guidance** and update the necessary auto guidance values.

## QUICK ACCESS

Swipe down from the top of the screen for notifications, warnings, available updates, etc., as well as:

- Brightness
- Wi-Fi status
- USB status
- Android settings



## USING APP CENTRAL

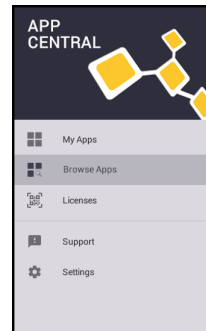
From the Launcher screen, tap the **App Central** icon to open the App Central Marketplace:



From here, you can browse available applications and updates, check licenses, and check for automatic software updates or manually update software.

On the App Central screen, tap the menu icon in the upper left-hand corner to display the App Central menu, where you can:

1. Tap **My Apps** to view your installed apps and to configure update notifications.
2. Tap **Browse Apps** to view all available apps that you can install.
3. Tap **Licenses** for a list of active licenses for the XCN-1050 display. Tap the NAV-900 button for a list of active licenses for the NAV-900 module.
4. Tap **Support** to retrieve log files to save to a USB drive. You can also send feedback to your support service and include current system information.





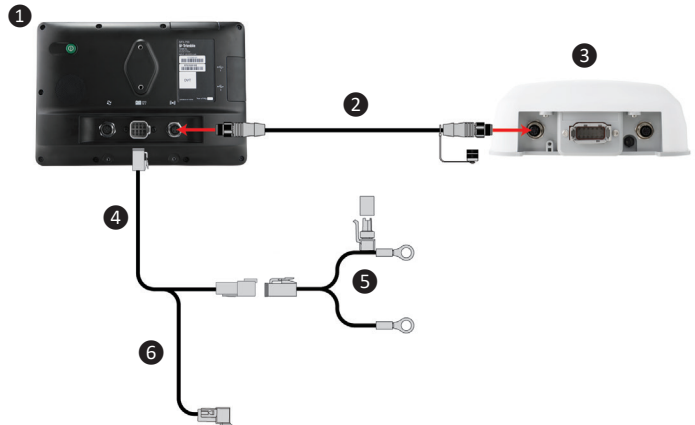
# XCN-1050 DISPLAY SYSTEM

	Description	Use to ...
1	Power button	Turn the display on or off.
2	Expansion Port (5-pin B code)	Connect to various inputs and outputs.
3	Main Power connector	Powers display system (including the NAV-900).
4	Power/Ethernet Port (4-pin D code)	Connects to NAV-900 Guidance controller (power/GNSS).
5	USB sockets	Connect a USB memory stick to the display to transfer data to and from the unit.
6	Power/Ethernet Port (4-pin D code).	Connects to XCN-1050 (power/GNSS)
7	Main Port- 12 pin DTM.	Connects to various Auto Guidance systems.
8	RTK Radio Port (5-pin A code).	Connects to various RTK radios.



**Caution!** Some connectors may appear similar, but are coded differently to ensure correct component mating. Check that you have the correct cable before connecting, and do not use excessive force or damage may result.

	Description
1	XCN-1050 Display
2	XCN-1050 Display to NAV-900 Guidance Controller cable
3	NAV-900 Guidance Controller
4	XCN-1050 System Power and CAN (1) Display cable
5	XCN-1050 System Power (Battery Cable)
6	P2 CAN Port. Uses adapters to connect to CAN implement devices (ISO and Field-IQ Basic)



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