GFX-750 / XCN-1050 Display System

INSTALLATION AND USER GUIDE

TRANSFORMING THE WAY THE WORLD WORKS

Trimble®

Legal Notices

Agriculture Business Area

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Release Notice

This is the July 2018 release (Revision Revision) of the *GFX-750/XCN-1050 Display System Installation and User Guide*, part number [Part Number]. It applies to version Version of the GFX-750 / XCN-1050 Display System .

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Trimble warrants that this Trimble product and its internal components (the "Product") shall be free from defects in materials and workmanship and will substantially conform to Trimble's applicable published specifications for the Product for a period of one (1) year, starting from the earlier of (i) the date of installation, or (ii) six (6) months from the date of product shipment from Trimble. This warranty applies only to the Product if installed by Trimble or a distributor authorized by Trimble to perform Product installation services.

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Notices

Class B Statement – Notice to Users.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and the receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Contains FCC ID: Z64-2564N

Industry Canada statement

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiation Exposure Statement:

The product comply with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

Déclaration d'exposition aux radiations:

Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé. Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.

Contains IC: 451I-2564N

Notice to Our European Union Customers

For product recycling instructions and more information, please go to:

http://www.trimble.com/Corporate/Environmental_Compliance.aspx

Recycling in Europe: To recycle Trimble WEEE, Call

+31 497 53 2430, and ask for the "WEEE Associate"

Or

Mail a request for recycling instructions to:

Trimble Europe BV
c/o Menlo Worldwide Logistics

Meerheide 45

5521 DZ Eersel, NL

Aviso para México

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Safety Information

Always follow the instructions that accompany a Warning or Caution. The information they provide is intended to minimize the risk of personal injury and/or damage to property. In particular, observe safety instructions that are presented in the following format:

⚠ WARNING – This alert warns of a potential hazard whoch, if not avoided, could result in severe injury or even death.

⚠ CAUTION – This alert warns of a potential hazard or unsafe practice which, if not avoided, could result in injury or property damage or irretrievable data loss.

NOTE – An absence of specific alerts does not mean that there are no safety risks involved.

Warnings

⚠ WARNING – When you are working on the vehicle's hydraulic systems, vehicle attachments that are suspended can drop. If you are working around the vehicle, you could suffer serious injury if an attachment dropped on you. To avoid this risk, lower all vehicle attachments to the ground before you begin work.

⚠ WARNING – If someone else attempts to drive the vehicle while you are working on or under it, you can suffer serious or fatal injuries. To avoid this possibility, install a lockout box on the battery terminal to prevent the battery from being reconnected, remove the key from the vehicle's ignition switch, and attach a "Do not operate" tag in the cab.

⚠ WARNING – Agricultural chemicals can pose serious health risks. If the vehicle has been used to apply agricultural chemicals, steam clean the vehicle to remove any chemical residue from the areas of the vehicle where you will be working.

⚠ WARNING – Vehicle cabs can be quite high in the air. To avoid potentially serious injury through falling from this height, always use the steps and handrails, and face the vehicle, when you enter or exit it.

Cautions

⚠ CAUTION – When the vehicle has been running, parts of the vehicle, including the engine and exhaust, can become extremely hot and can cause serious burns. To avoid burns, allow hot machine parts to cool before you begin working on them.

⚠ CAUTION – The system installation may bring you into contact with chemical substances, such as oil, which can cause poisoning. Wash your hands thoroughly after you finish working on the system.

⚠ CAUTION – Battery posts, terminals, and related accessories contain lead and lead compounds, which can cause serious illness. To avoid ingesting lead, wash your hands thoroughly after touching the battery. Take care not to short-circuit the battery with tools and/or by the incorrect fitting of cables as fire, burns, and damage can occur.

⚠ CAUTION – Always wear protective equipment appropriate to the job conditions and the nature of the vehicle. This includes wearing protective glasses when you use pressurized air or water, and correct protective welder's clothing when welding. Avoid wearing loose clothing or jewelry that can catch on machine parts or tools.

⚠ CAUTION – Parts of the vehicle may be under pressure. To avoid injury from pressurized parts, relieve all pressure in oil, air, and water systems before you disconnect any lines, fittings, or related items. To avoid being sprayed by pressurized liquids, hold a rag over fill caps, breathers, or hose connections when you remove them. Do not use your bare hands to check for hydraulic leaks. Use a board or cardboard instead.

⚠ CAUTION – Do not direct pressurized water at:
- electronic or electrical components or connectors
- bearings
- hydraulic seals
- fuel injection pumps
- any other sensitive parts or components

Set the hose pressure as low as practicable, and spray at a 45° to 90° angle. Keep the nozzle of the power washer away from the machine at the distance recommended by the manufacturer.

⚠ CAUTION – To prevent damage to the system, make sure that no wires or hoses interfere with or catch on any mechanical linkages, or contact any machine parts that get hot.

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1

NAV-900 Guidance Controller Installation

▶ Introduction

▶ LED Indicators

▶ Mounting the NAV-900 Guidance Controller

▶ Firmware

This manual describes how to install the Trimble® NAV-900 guidance controller and the GFX-750 display system.

Even if you have used another GNSS (Global Navigation Satellite System), such as the United States' GPS (Global Positioning System), before, spend some time reading this manual to learn about the special features of this product. If you are not familiar with GNSS, go to the Trimble website (www.trimble.com) for an interactive look at Trimble and GNSS.

Introduction

The Trimble® GFX-750 display is a touchscreen platform for precision agriculture.

The NAV-900 guidance controller is a GNSS receiver with an integrated Inertial Measuring Device (IMD) and auto-guidance controller:

It has three ports on the back:

- 4-pin, D code – Power/Communication (display) 1
- Deutsch, 12-pin DTM – Main interface port 2
- 5-pin, A code – RTK Radio connection 3

Basic system diagram
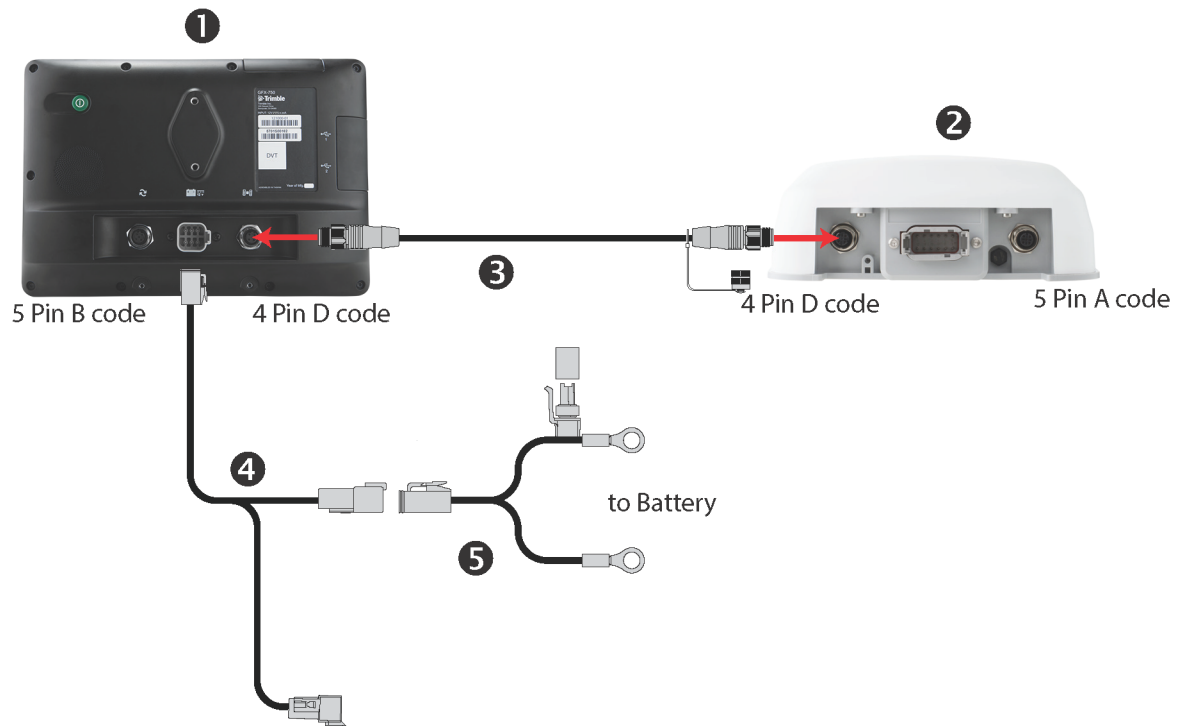
	Description	P/N
1	GFX-750 Display	121000-05
2	GFX-750 Display to NAV-900 Guidance Controller cable	110540
3	NAV-900 Guidance Controller	108993-05
4	GFX-750 System Power and CAN (1) display cable. CAN Port - Uses adapters to connect to CAN implement devices (ISO and Field-IQ™ Basic)	110551
5	GFX-750 System Power (Battery Cable)	67258

Required components for mounting

P/N	Description
108993-05	Guidance Controller, NAV-900, Trimble
109315	NAV-900 Base Mount Plate
109890	NAV-900 Base Mount Feet

Optional accessories for mounting

P/N	Description
109314	NAV-900, Mount, Quick Release Kit
110308	NAV-900, Mount, Spar Quick Release Adapter
111339	NAV-900, Mount, CNH Quick Release Adapter
111340	NAV-900, Mount, Agco Adapter
111342	NAV-900, Mount, JD Adapter
64898	Spar mount: 16.5" – 28.5"
55349	Spar mount: 27.5" – 37.5"
53676	Spar mount: 36.5" – 46.5"
55348	Spar mount: 45" - 55"
66774	Spar mount: 54" – 64"

NOTE – The standard multi-purpose mount plate and feet are supplied in your basic kit. Optional vehicle specific mounts are also available including the ones shown in the above table.

Ag-820 radio system

5 Pin B code   4 Pin D code   4 Pin D code   5 Pin A code

to Battery
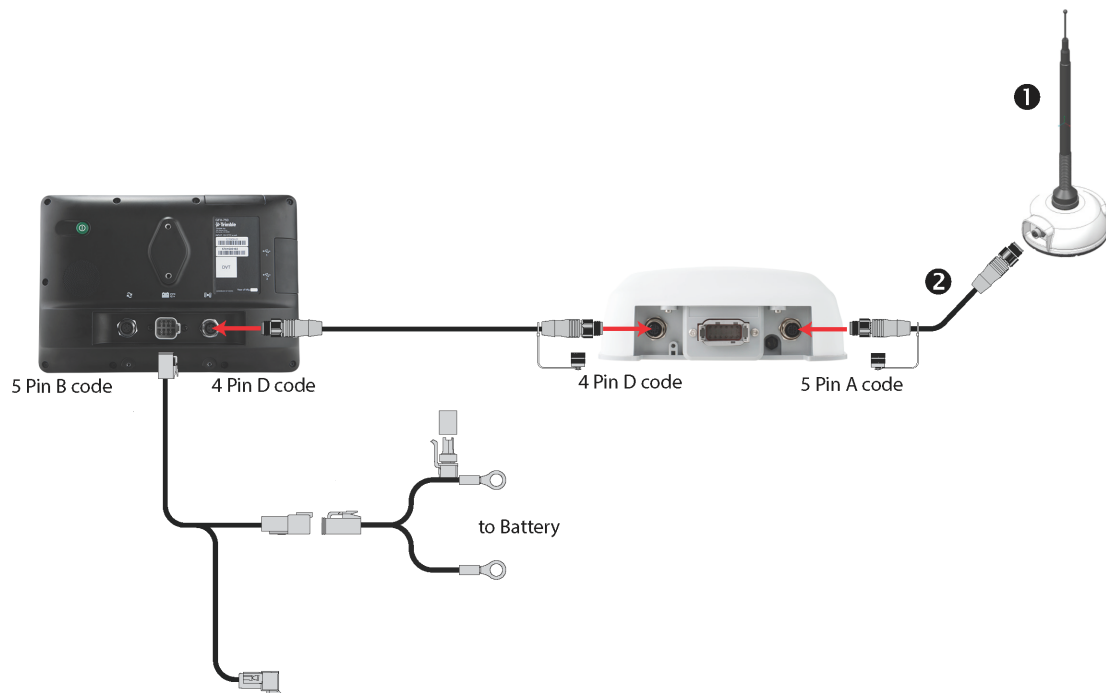
	Description	P/N
①	Ag-820 Radio Kit, 430-450 MHz	123500-44
	Ag-820 Radio Kit, 450-470 MHz	123500-46
	Ag-820 Radio Kit, 900 MHz	123500-90
②	NAV-900 to Ag-820 cable	113295

Preparing the vehicle for installation

1. Park the vehicle on a hard, level surface. Block the front and rear wheels.

2. Align the steering straight ahead. On an articulated vehicle, install the articulation locks.

3. Remove all dirt and debris from the areas of the vehicle where the guidance controller will be installed.

4. Open all kit boxes and check the contents of the box against the packing list/s. Lay all of the parts out on a clean workbench.

NOTE – *The left and right sides of the vehicle are referenced while standing behind the unit, facing the normal direction of travel.*

Technical assistance

For additional cable guides and information on connecting Auto Guidance Systems or if you have a problem and cannot find the information you need in the product documentation, go to https://agriculture.trimble.com/precision-ag/products/displays/ or contact Trimble technical support.

LED Indicators

▶ LED color: None

▶ LED color: Red

▶ LED color: Red/Orange

▶ LED color: Red/Green

▶ LED color: Orange

▶ LED color: Green

▶ Fatal error

Below the M12 4-pin display connector is the status LED indicator with three colors: Red, Orange, and Green. Different modes indicate different status conditions for the receiver varying between hardware issues, firmware issues, and the GNSS fix status (varies by selected correction type).

LED color: None

LED State	Hardware/ Firmware indication	Autonomous	SBAS	Rangepoint RTX	OmniSTAR HP/XP/G2	CenterPoint RTX (FS/SS)	CenterPoint RTX (Cell)	CenterPoint RTK/VRS
Off	No Power	N/A	N/A	N/A	N/A	N/A	N/A	N/A

LED color: Red

LED State	Hardware/ Firmware indication	Autonomous	SBAS	Rangepoint RTX	OmniSTAR HP/XP/G2	CenterPoint RTX (FS/SS)	CenterPoint RTX (Cell)	CenterPoint RTK/VRS
Solid	Unit has failed. Send in for service	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flashing 1 HZ	Unit is in Monitor mode. FL200 must be used to load valid main firmware	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rapid red then solid orange	Boot Monitor Activity with Main Firmware loading while unit is initializing	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alternating red and green	Firmware is uploading or Flash File system is being formatted	N/A	N/A	N/A	N/A	N/A	N/A	N/A

LED color: Red/Orange

LED State	Hardware/ Firmware indication	Autonomous	SBAS	Rangepoint RTX	OmniSTAR HP/XP/G2	CenterPoint RTX (FS/SS)	CenterPoint RTX (Cell)	CenterPoint RTK/VRS
Rapid red then solid orange	Boot Monitor Activity with main firmware loading while unit is initializing	N/A	N/A	N/A	N/A	N/A	N/A	N/A

LED color: Red/Green

LED State	Hardware/ Firmware indication	Autonomous	SBAS	Rangepoint RTX	OmniSTAR HP/XP/G2	CenterPoint RTX (FS/SS)	CenterPoint RTX (Cell)	CenterPoint RTK/VRS
Alternating red and green	Firmware is uploading or Flash File system is being formatted	N/A	N/A	N/A	N/A	N/A	N/A	N/A

LED color: Orange

LED State	Hardware/ Firmware indication	Autonomous	SBAS	Rangepoint RTX	OmniSTAR HP/XP/G2	CenterPoint RTX (FS/SS)	CenterPoint RTX (Cell)	CenterPoint RTK/VRS
Rapid red then solid orange	Boot Monitor Activity with Main Firmware loading while unit is initializing	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fast flash	N/A	No position	No position	No position	No position	No position	No position	No position
Slow Flash	N/A	N/A	Autonomous No SBAS signal	Autonomous /DGPS No RTX signal	Autonomous /DGPS No OmniSTAR signal	Autonomous /DGPS No RTX signal	Autonomous /DGPS Not connected to RTX server	Autonomous /DGPS No CMR or RTCM3 corrections
Solid	N/A	N/A	Autonomous Have SBAS signal	Autonomous /DGPS Have RTX signal	Autonomous /DGPS Have OmniSTAR signal	Autonomous /DGPS Have RTX signal	Autonomous /DGPS. Connected to RTX server	Autonomous /DGPS CMR or RTCM3 corrections arriving

LED color: Green

LED State	Hardware/ Firmware indication	Autonomous	SBAS	Rangepoint RTX	OmniSTAR HP/XP/G2	CenterPoint RTX (FS/SS)	CenterPoint RTX (Cell)	CenterPoint RTK/VRS
Alternating red and green	Firmware is uploading or Flash File system is being formatted	N/A	N/A	N/A	N/A	N/A	N/A	N/A

LED State	Hardware/ Firmware indication	Autonomous	SBAS	Rangepoint RTX	OmniSTAR HP/XP/G2	CenterPoint RTX (FS/SS)	CenterPoint RTX (Cell)	CenterPoint RTK/VRS
Fast flash	N/A	N/A	DGPS, no SBAS signal. Using old corrections	Converged/ Unconverged. Using old corrections	Subscription expired or other error	Converged/ Unconverged. Using old corrections	Converged/ Unconverged. Using old corrections	Fixed/Float. Using old corrections
Slow flash	N/A	N/A	DGPS, no SBAS signal. Using recent corrections	Unconverged	Unconverged	Unconverged	Unconverged	Float
Solid	N/A	Autonomous position	DGPS, have SBAS signal	Converged	Converged	Converged	Converged	Fixed

Fatal error

A fatal error will be indicated by the following repeating cycle:

- Rapidly flashing Red > Solid Orange
- Possible flashing Orange > Rapidly flashing Red

Mounting the NAV-900 Guidance Controller

▶ Orientation of the guidance controller

▶ Mounting options

▶ Attaching the base mounting plate

▶ Factory-fitted specific mounting options

▶ Spar mounting method

▶ All mounting types – Connecting the cables

Orientation of the guidance controller

The presence of the Inertial Measurement Device (IMD) requires that the device is installed rigidly with the orientation of the guidance controller being specified in reference to the top/front of the vehicle.

A neutral 0°, 0°, 0° (Roll, Pitch, Yaw) orientation is required, with the dome up and the connectors facing backwards toward the rear of the tractor.

Mounting options

1. VHB double-sided tape mounting (see page 1).

   NOTE – VHB mounting is not recommended for high-precision auto guidance installations and should be used as the last option; a more rigid fixed mount option is recommended as some cabs can have flexibility in their structure. For high performance, choose from one of our more rigid factory mount adapters or spar mount options. See Optional accessories for mounting, page 13.

2. Factory-fitted mounts:

   - AGCO factory roof mounts (see page 22)

     - Challenger

     - Massey Ferguson

     - Valtra

   - Case IH factory roof mounts (see page 22)

   - Fendt Internal factory roof mounts (see page 23)

- John Deere factory mounts (see)
  - Current Starfire
- New Holland factory roof mounts (see)
3. Spar mounting (see).

Attaching the base mounting plate

The guidance controller has a base mounting plate (P/N 109315) for adapting to other mounting fixtures. It is attached using four M6 x 14 mm bolts with flat washers and lock washers into the 4 bolts in the base of the housing.

Factory-fitted specific mounting options

AGCO factory roof mounts (five different types)

Type 1 - AGCO Challenger MT 765E Tracked Tractor

1. Fit the two tabs on the NAV-900 guidance controller mount plate into the slots on the existing roof bracket.
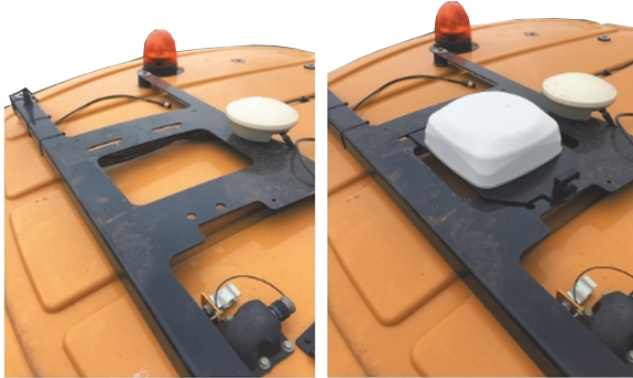
2. Insert, twist, and latch the opposite side of the plate.

Case IH factory roof mounts

Case IH machines that come factory ready are fitted with a quick release mount for the 252/262/372 receivers. There is a specific NAV-900 guidance controller mount plate for these vehicles (P/N 111339).

Slip the open slot on the mount plate over the raised tab on the CNH receiver mount plate and then use the over-center latch to secure the guidance controller.

Case IH Flagship combine install: (Case IH 9120 pictured)
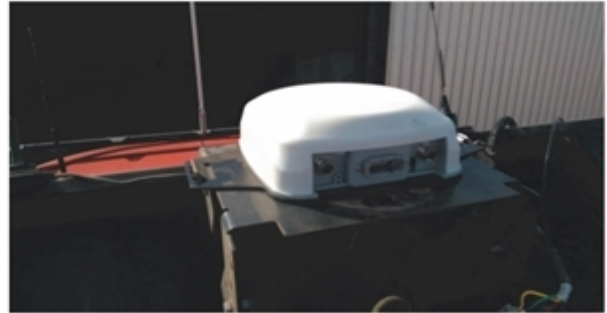
Case IH Tractor install: (CIH Magnum 340 pictured)

Fendt internal roof factory mounts

Guidance Ready Fendt (MY 2016 and later) and Challenger 1000 series machines have a cavity within the roof for GNSS antennas.

For these machines: (Fendt 716 Vario Profi MY2016 shown)

1. Open the roof cavity.
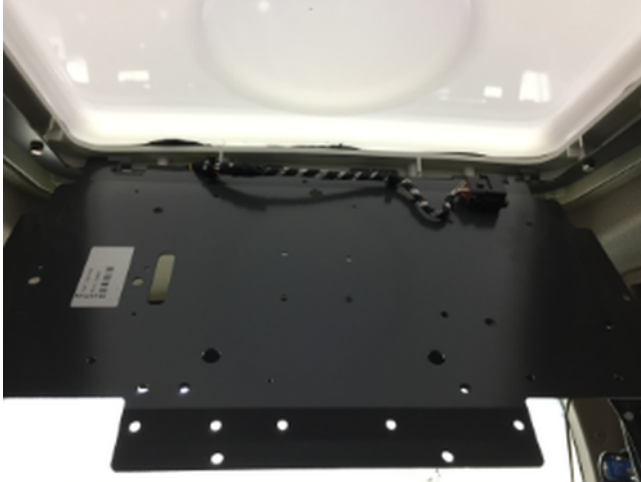
2. Remove the antenna mounting tray. Center the guidance controller on the tray.
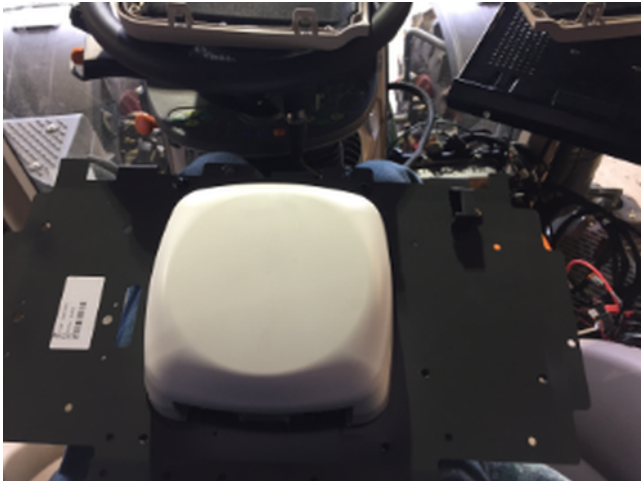
3. Use the base mounting plate as a template to mark and drill ¼" holes for mounting the guidance controller.

4. Re-insert the mounting tray in the roof, and use the M6 bolts.
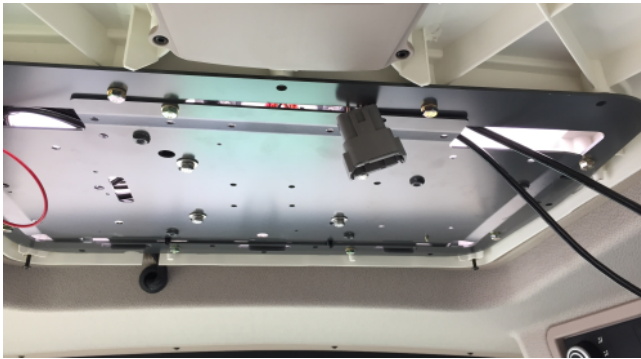
John Deere Starfire factory mounts

Current versions

1. Secure the guidance controller to the John Deere factory adapter (P/N 111342) using the four supplied countersunk M6 bolts. The connectors should be located opposite of the latch.
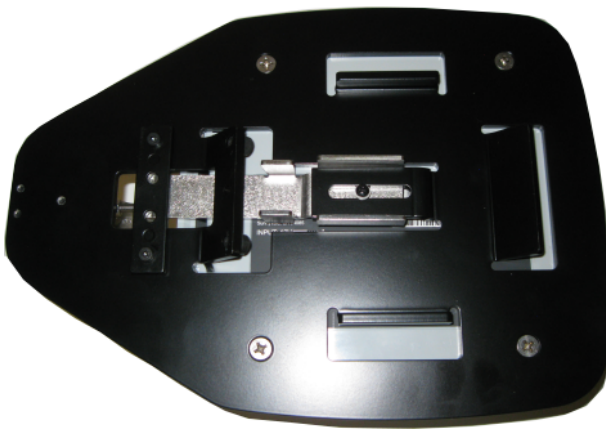
The adapter will secure to the John Deere factory Mounting Square:

2. Lay the back side of the mount onto the square.

3. Lay the front side down and secure with the latch.

4. Connect the Interface Cable to the Starfire connector under the front of the roof.

New Holland factory roof mounts

New Holland machines that come factory ready are fitted with a quick release mount for the 252/262/372 receivers. The NAV-900 guidance controller CNH adapter plate (P/N 111339) will fit into these mounts.

See also .

Spar mounting method

For vehicles that do not have factory mounting methods or the factory mounting method is already in use, Spar mounts are available to span between rigid bolts on the roof.

Lengths available are:

- P/N 64898: 16.5" – 28.5"
- P/N 55349: 27.5" – 37.5"
- P/N 53676: 36.5" – 46.5"
- P/N 55348: 45" - 55"
- P/N 66774: 54" – 64"

The guidance controller plate has a four-bolt pattern that directly attaches to the spar mounts:
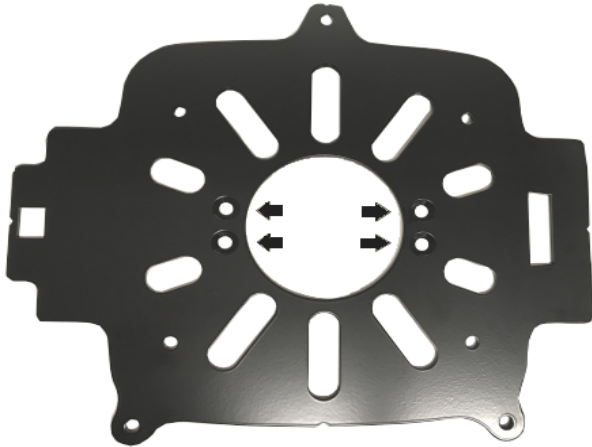
1. Remove the spar from the box and lay out the hardware:
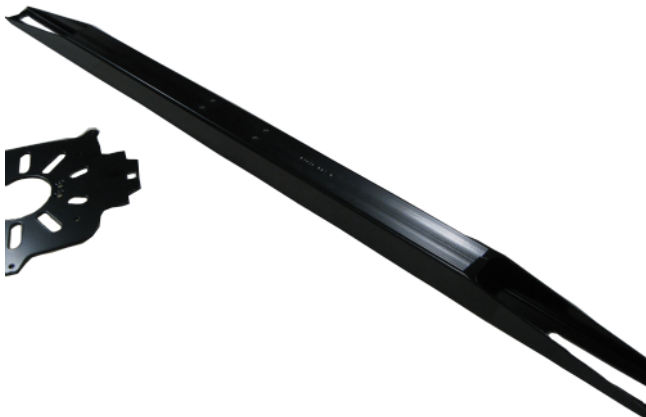
2. Align the four holes on the base mounting plate with the four holes in the spar. Install the supplied ¼-20 × ½" countersunk bolts and tighten appropriately.
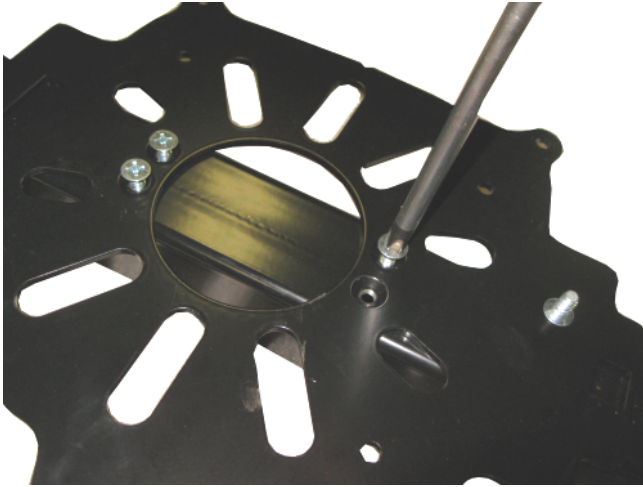
3. Lay the guidance controller on its top.

4. Lay the mounting plate with spar attached over on top. Attach the plate to the guidance controller with the four 6 mm bolts and lock washers. Tighten the bolts. Take care not to over-tighten the bolts as damage may result.
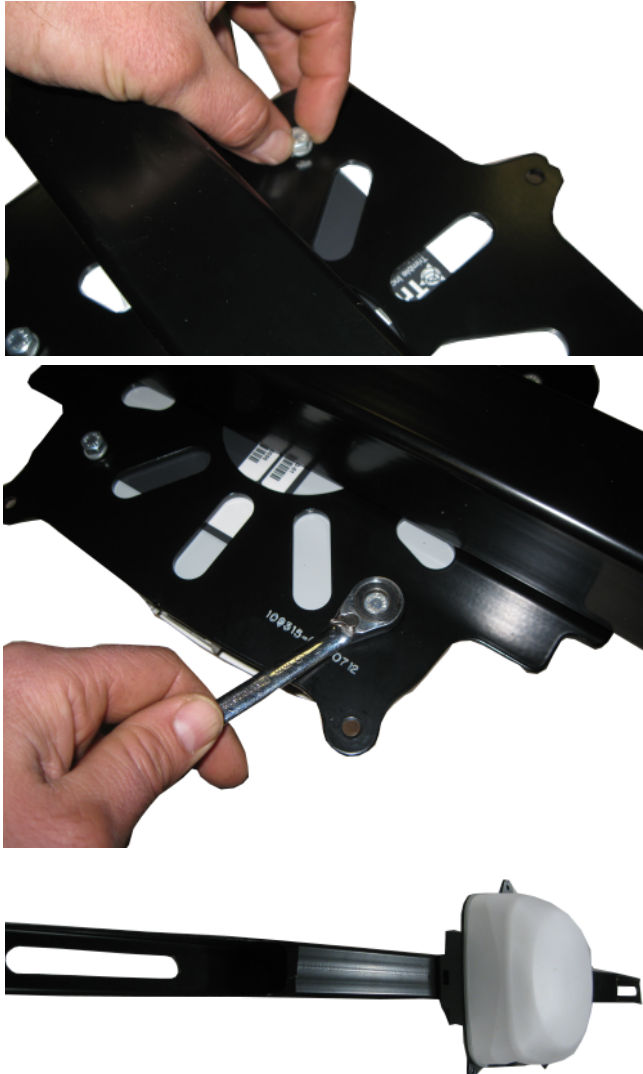
5. Loosen and remove the large bolts on the cab that are to be used to fasten down the spar.

6. Place the supplied spacer on the cab mounting point. The thickness of the spacer will vary by kit.

7. Locate the provided longer bolts to be use for securing the spar. Put both the original washer and the larger provided washer on the bolt.

8. Place the spar on the space and insert the bolt.

9. Insert the bolt on the other side of the cab. Center the spar on the cab using a measuring tape. Then tighten the bolts.

All mounting types – Connecting the cables

1. Connect the display cable to the 4-pin M12 connector on the left of the NAV-900 guidance controller.

2. Make sure that you align the keying and then tighten the connector.

3. Insert the install specific interface cable into the 12-pin Deutsch connector.

4. If a radio is being installed, remove the plastic cap on the radio connector (right side 5-pin M12 connector) and carefully align the keying. Tighten the connector.

5. If no radio is being installed, leave the cap on for weather protection.

Firmware

The NAV-900 firmware automatically updates to match the version running on the Trimble GFX-750 display.

You can get updates manually via USB drive or via the Internet using Wi-Fi.

To automatically download the latest software updates:

1. Tap **Settings** and select **WiFi Settings**.

2. Tap **Connect** to connect your tablet to the network of your choice.

3. On the **Android App** screen, tap **App Central** to open the App Central market place. From here, you can initialize any software notification and update.

For more information, go to http://agpartners.trimble.com/agsupport/FirmwareMatrix/ or https://agriculture.trimble.com/precision-ag/products/.

Precision-IQ User Guide

- ▶ The Precision-IQ Home Screen

- ▶ Before you begin – Setup Procedures

- ▶ Before you begin – Selection Process

- ▶ The Run screen

- ▶ Guidance Mapping

- ▶ Common Precision-IQ icons

- ▶ Data Transfer

- ▶ Advanced settings: Vehicle Auto Guidance

- ▶ Quick access

- ▶ Using App Central

- ▶ GFX-750 Display System

The Trimble® GFX-750 display is a touchscreen platform for precision agriculture. Below are the main steps for setting up the GFX-750 display.

The Precision-IQ Home Screen

Tap the Precision-IQ icon to launch the application.

The Home screen displays by default:
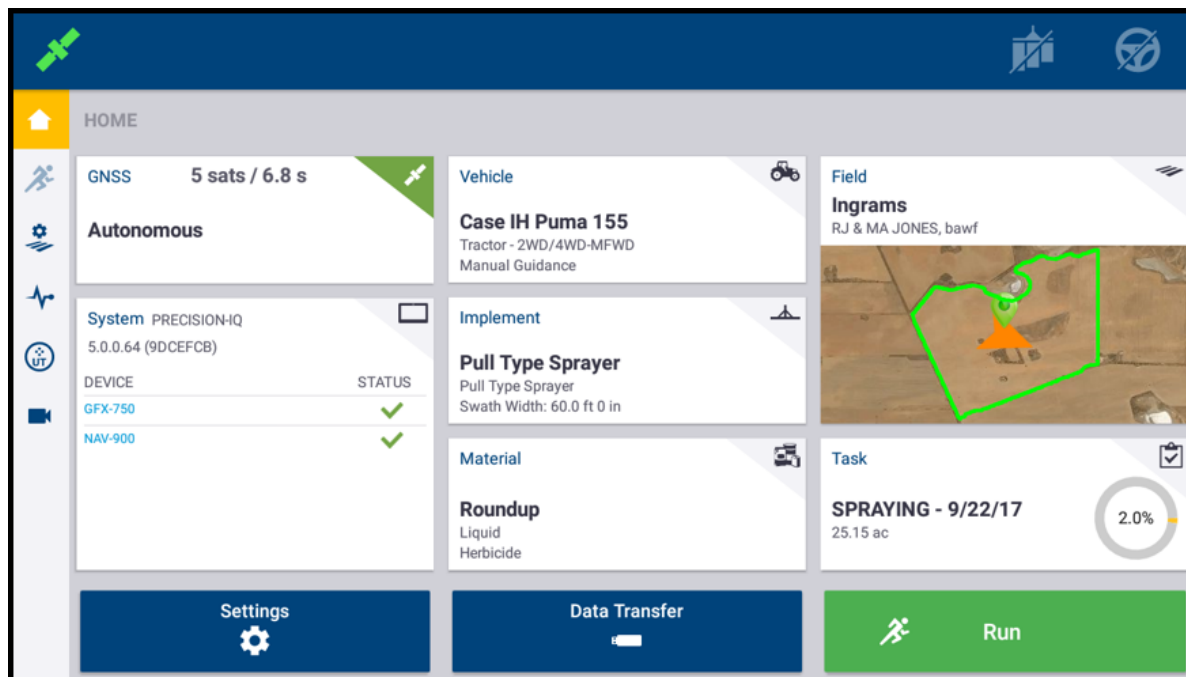
Emergency Stop - Tap the Emergency Stop icon from any screen to stop all activities controlled by the display.

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

1. From the Home screen, tap the GNSS tile:
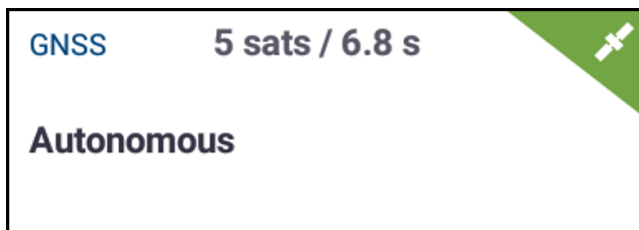
   By default, GNSS is set up for **Autonomous** correction.

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

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

1. From the Home screen, tap the **Implement** tile:
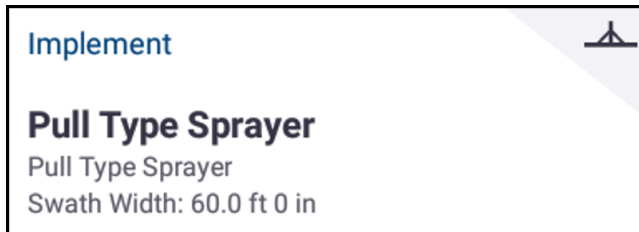
2. Tap **New** to launch the implement creation wizard. From here, you can select from a variety of implement types.

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

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).

- 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 **Save** 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

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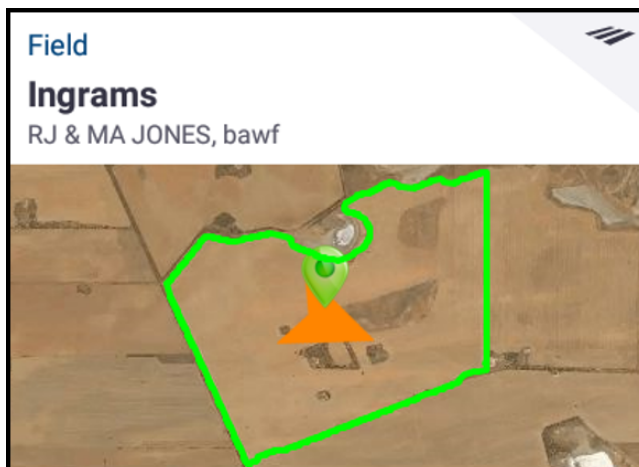
2. Tap **New** .

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 then tap **OK**.

Alternatively, you can transfer existing field data files directly to the GFX-750 display:

1. Insert a USB drive into the USB port of the GFX-750 display.

2. On the Home screen, tap **Data Transfer**.

3. On the Data Transfer screen:

   • The left side of the screen (labeled **Internal**) shows the data files currently available on the GFX-750 display.

   • The right side of the screen (labeled **USB**) shows the data files of the USB drive.

4. From the USB region, tap **Fields** to expand the menu and display all available fields.

5. 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.

6. 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:

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

2. Tap a vehicle from the selection list.
   The Vehicle screen will update to show the relevant details about the vehicle.

3. Tap **Select Vehicle**.

Select Vehicle

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

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

Select an implement

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

Implement

Pull Type Sprayer
Pull Type Sprayer
Swath Width: 60.0 ft 0 in
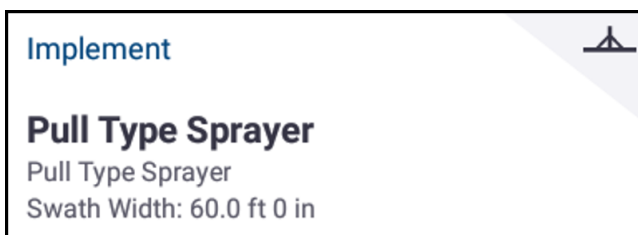
2. Tap an implement from the list of implements that have been previously set up. The **Implement** screen will update to show details about the selected implement.

3. 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

1. 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.

2. From the list of available channels, **Channel 1** is selected by default.

3. From the list of available materials, tap a material to select it.

   The Materials screen will update to show details about the selected material.

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

Select a field

1. From the Home screen, tap the **Field** tile:
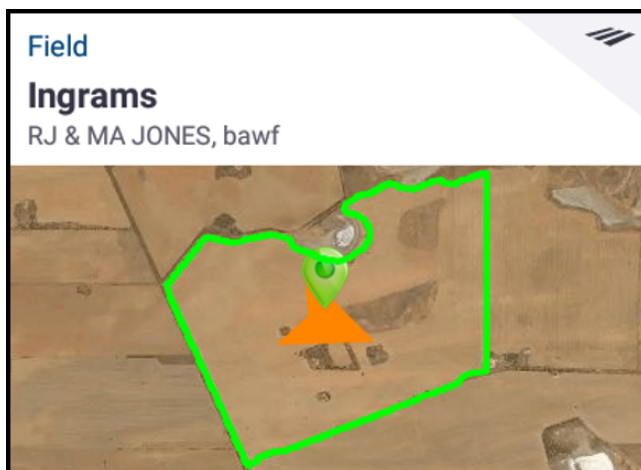
2. From the list of available fields, tap a field to select it.

   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:
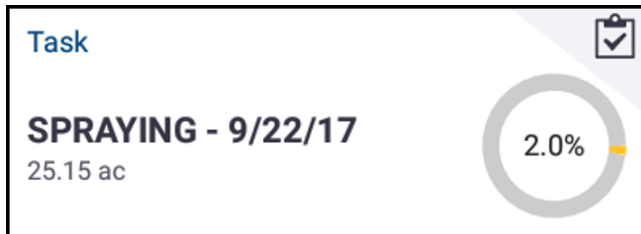
2. Tap **New** . A **Create New Task** pop-up window will display with a valid task with the current date (for example, SPRAYING - 9/22/17).

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 [image of 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 **Stop** ●　Stop 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 .

   When you are at the end of the line, tap to stop recording.

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 to stop recording.

Create a landmark point

A Landmark Point identifies singular elements of your field to be avoided, such 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 to begin recording the area.

3. Drive to the ending boundary of the area and then tap .

Common Precision-IQ icons

Activity Bar Icons					
Home	Run	Field Manager	Diagnostics	Universal Terminal	Camera

Run Screen Icons			
Widgets Menu	Layers	Boundaries	Landmarks

Guidance Pattern Boundaries, Patterns, and Line Icons					
Boundary	Headland	Pivot	AB Line	A+ Line	Curve

Landmarks Icons			
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 application can be transferred to Trimble Ag 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

Trimble Ag Software includes the licenses and support for Precision-IQ's Office Sync feature. For details, see: https://agriculture.trimble.com/software/farmers/.

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 GFX-750 display.

2. On the Precision-IQ Home screen, tap the Data Transfer button ![Data Transfer].

3. On the **Data Transfer** screen, you have a variety of data types to transfer:
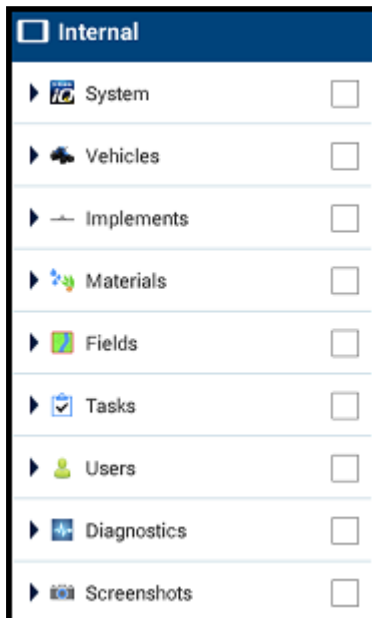
4. Tap an item to expand to select individual components (for example, select one or more vehicles). Or tap the selection box for the item to select all of the individual components of the item.

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
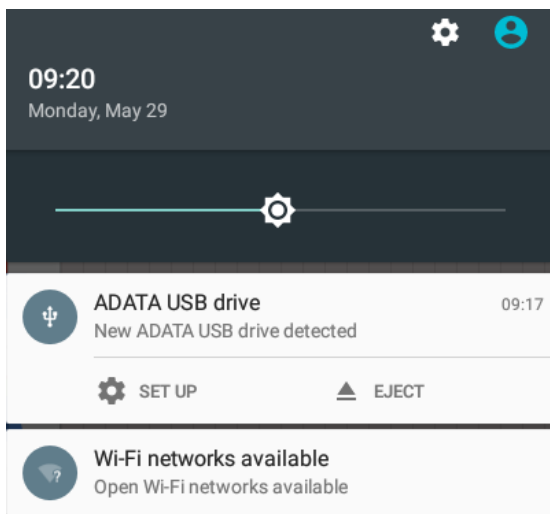
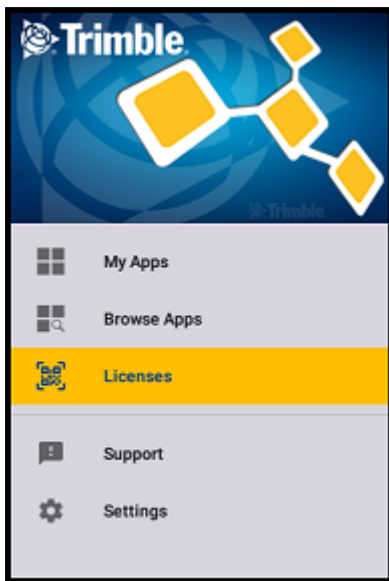# Using App Central

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:

Here you can:

- Tap **My Apps** to view your installed apps and to configure update notifications.

- Tap **Browse Apps** to view all available apps that you can install.

- Tap **Licenses** for a list of active licenses for the GFX-750 display. Tap the NAV-900 button for a list of active licenses for the NAV-900 module.

- 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.

GFX-750 Display System

Item	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	Power the display system (including the NAV-900).
4	Power/Ethernet Port (4-pin D code)	Connect 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)	Connect to GFX-750 (power/GNSS)
7	Main Port - 12-pin DTM	Connect to various Auto Guidance systems.
8	RTK Radio Port (5-pin A code)	Connect 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.
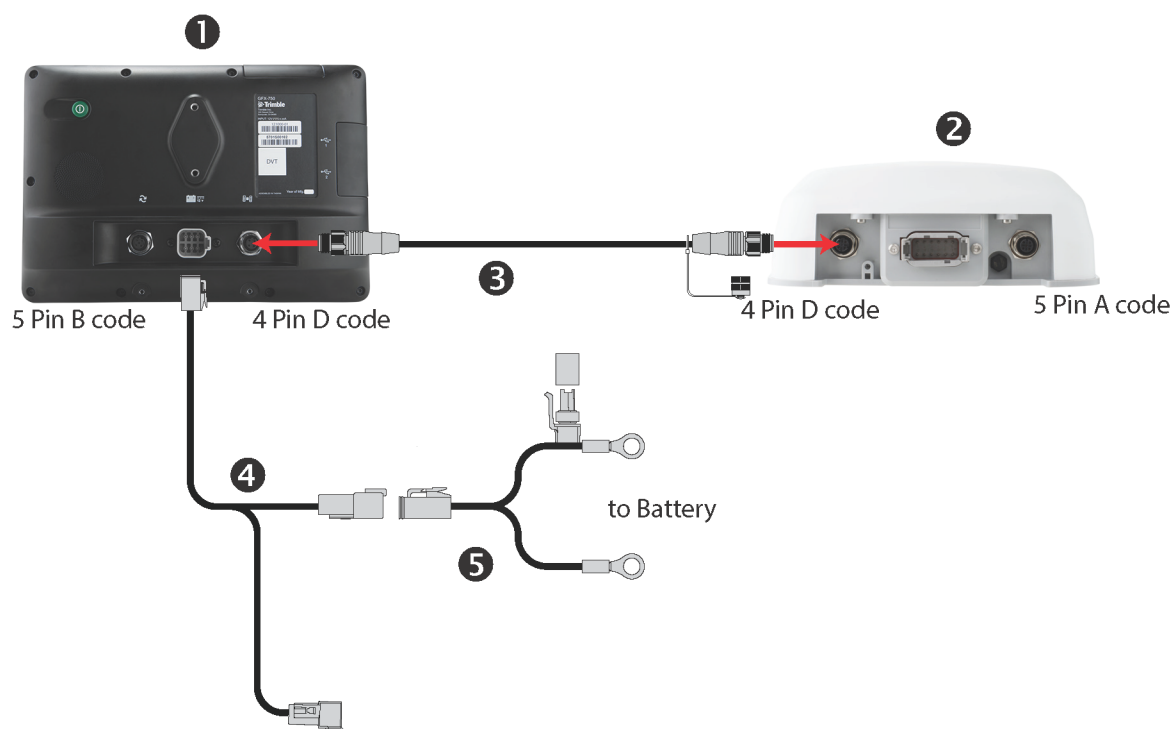
Item	Description	P/N
1	GFX-750/XCN-1050 display, with PIQ App	121000-05
2	GFX-750 Display to NAV-900 Guidance Controller cable	110540
3	NAV-900 Guidance controller	108993-05
4	GFX-750 System Power and CAN (1) display cable. P2 CAN Port - Uses adapters to connect to CAN implement devices (ISO and Field-IQ Basic)	110551
5	GFX-750 System Power (Battery Cable)	67258