

Data Transfer

AGRICULTURE

July 2019

TRIMBLE RESELLER CONFIDENTIAL

Using Precision-IQ's Data Transfer Service

Precision-IQ provides support for the transfer of data between a display in the field and the Trimble Ag Software you use in your back office. The collected data from your display can be transferred:

- **Wirelessly** using the AutoSync™ feature through a cellular or Wi-Fi network. Office Sync can be used for data transfer for Precision-IQ firmware versions lower than 6.xx.

It is recommended to use the wireless option because data transfers can be configured to be done automatically and seamlessly.

Notes:

- The GFX-750™ display includes Wi-Fi functionality built-in.
- To connect a TMX-2050™ display to a Wi-Fi network, see the [TMX-2050 Display: Supported Wi-Fi and Mobile Tethering Devices](#) support bulletin.
- For other connection options, see the *AutoSync: Connectivity Guide* section of the [AutoSync User Guide](#).

When a wireless communication is established, all jobs that are completed in the field (using required hardware) are sent to the web server for Trimble Ag Software. In addition, the display looks for updated information to download from your Trimble Ag Software storage area. If you lose communication with the web server, then your completed jobs are sent once communication is reestablished.

- **Manually** using a USB device. Both GFX-750 and TMX-2050 displays include USB ports for manual data transfer.

Use the manual option when no network connectivity is available or connection is poor.

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AutoSync - Wireless Data Transfer (for Precision-IQ Firmware Version 6.xx and Higher)

AutoSync automatically syncs farm data across Trimble displays utilizing Precision-IQ software, eliminating the need to manually share data via USB. AutoSync significantly reduces duplication, data re-entry, and human error because field, resource, and operator information — whether online, via the Trimble Ag mobile app, or on the display — is automatically synced by the minute across the entire farm operation.

The AutoSync feature is included with Farmer Core, Farmer Fit, and Farmer Pro software subscriptions. Display Connections licenses are required for each connected Trimble display.

AutoSync exchanges guidance lines, field boundaries, client/farm/field names, landmarks, vehicles, materials, implements and operators. When the task is completed, task data will transfer from the displays to the online platform. Customers with appropriate permissions can create, edit, and delete from any of the connected devices, automatically updating the other devices within a few minutes:

Data Type	Create	Edit	Delete
Guidance Lines	✓	✓	✓
Client/Farm/Field Names	✓	✓	✓
Landmarks and Boundaries	✓	✓	✓
Operators	✓	✓	✓
Vehicles	✓	✓	✓
Materials	✓	✓	✓
Implements	✓	✓	✓

Using the wireless capabilities of AutoSync, you can:

- **Save Time** — Share farm data across all supported devices used in the operation, eliminating dual entry of data.
- **Improve Efficiency** — Ensure definition and use of guidance lines is consistent for all operators through automatic syncing.
- **Reduce Human Error** — Improve integrity of records by eliminating errors caused by multiple entry of guidance lines, field names, field boundaries, resources, and landmarks.
- **Leverage Two-Way Data Transfer** — Powered by AutoSync, Trimble Ag Software solutions enable automatic two-way data transfer with supported displays.
- **Satisfy Regulatory and Contractual Obligations** — AutoSync enables easy creation of application coverage maps (proof of placement reports).

For details about the prerequisites and configuration for AutoSync, refer to the [AutoSync User Guide](#) and the [AutoSync Support Workflow](#).

Note: AutoSync replaces Office Sync for Precision-IQ displays **only**. Customers using Office Sync on FMX, FMX+, and CFX can still access this functionality.

Setup and Configuration for Wireless Data Transfer

To establish an effective wireless data transfer, Precision-IQ must be properly set up and configured to collect the appropriate data to be transferred. This section describes how to set up and configure your display for wireless data transfer.

Both Office Sync and FarmStream enable data transfer to and from a display and the Trimble Ag Software.

- **Office Sync** is limited to file transfer to and from a display.

Note: Office Sync is available for Precision-IQ firmware versions below 6.xx only.

- **FarmStream** includes file transfer as well as real time vehicle location and status information.

For more information on FarmStream and how it compares to Trimble Ag's traditional telematics solution visit:

<https://agriculture.trimble.com/software/farmstream-faq/>

Office Sync does not need to be turned on in order for FarmStream to be enabled - it doesn't affect FarmStream operation.

Likewise, Trimble Ag software should be configured to receive a data transfer from Precision-IQ. Refer to the websites below for information about Trimble Ag software:

- General information on how to set up and configure Trimble Ag software:
<https://agriculture.trimble.com/software/support/how-to-central/>
- New vehicle setup instructions:
<https://agriculture.trimble.com/software/support/fleet-help/#CreatingANewVehicle>
- Vehicle connection license assignment instructions:
<https://agriculture.trimble.com/software/support/fleet-help/#AssigningVehicleLicense>

Follow the steps below to set up and configure Precision-IQ for wireless data transfer:

1. [Configuring Office Sync Settings](#)
2. [Configuring FarmStream Settings](#)

Configuring Office Sync Settings

Office Sync is a feature of Precision-IQ that allows your display to send and receive data.

Note: Office Sync is for file transfer only to and from a vehicle and is independent of FarmStream.

1. From the Precision-IQ Home screen, tap the **Settings** button. Then, on the Settings menu, tap **Office Sync**.
2. On the Office Sync settings screen, tap **Office Sync** to enable the feature. Once enabled, other settings become available to you to configure:
 - **Check Server** - Set how often you want the display to attempt to retrieve data from the server.
 - **Send Data** - Set how often you want the display to send information to the office.
 - **Auto Send Without Prompt** - Select whether or not you want the display to send information to the office automatically. If not enabled you will be asked when closing a field if you want to send the data.
 - **Auto Import Inbox** - Turns this feature on or off. Automatically import files received or hold for you to manually retrieve.

3. When you have completed the configuration for Office Sync, tap the Android **Back** button to return to the Home screen.

Configuring FarmStream Settings

Note: The Productivity tab is only visible if the **Enable Operators** feature is turned on. This feature is accessed by tapping **Settings** on the Home screen and selecting **Operators and Passwords**.

To use the Utilization app and FarmStream Fleet reporting on the display with Precision-IQ field application, you must first set up the thresholds in the Precision-IQ application.

Setting Vehicle and Implement Thresholds for FarmStream Reporting

After opening Precision-IQ, you can set up the Implement and Vehicle settings for the Utilization app, so the utilization data shows up as you want it to in FarmStream Fleet.

1. On the Precision-IQ Home screen, tap the **Vehicle** tile to set the vehicle settings. Then tap the **Productivity** tab.

In the Productivity tab, set a threshold for the vehicle maximum moving speed for the Utilization app. Any time that the vehicle travels over this maximum moving speed, it is reported as speeding. If you turn the Maximum Moving Speed off this means that the “speeding” state will not be used for the vehicle in FarmStream Fleet.

2. To set the maximum moving speed option, tap **Maximum Moving Speed**. Choose a maximum moving speed for the vehicle and then tap the green check button. There is also an option to display the speed in US or Metric units. The range of the allowed moving speed that can be selected is noted in the dialog:



3. Tap the **Summary** tab and save your changes.
4. Return to the Precision-IQ Home screen and tap the **Implement** tile to set the Implement thresholds for the Utilization application. Then tap the **Productivity** tab.

If an operator exceeds the functional speed for an implement, possible damage can occur to the implement, the vehicle, the crop or the field. The display can send information about the implement status to FarmStream Fleet in the Trimble Ag Software solution.

Note: The Productivity tab is only visible if the **Enable Operators** feature is turned on. This feature is accessed by tapping **Settings** on the Home screen and selecting **Operators and Passwords**.

These settings determine what information is sent about the implement from the Utilization application to FarmStream Fleet.

- To set the Maximum Transport speed, tap **Maximum Transport Speed** and enter a value in the range indicated. Select the Units, if required. Tap the green check to save.

- Tap **Maximum Operating Speed** and **Stopped To Delayed Timeout** to set the values and/or select units for these two parameters. Tap the green check to save.
- Tap the **Summary** tab and save your changes.

The table below describes the different settings options:

Setting	Description
Maximum Transport Speed	<p>The functional speed limit for transporting the implement. The options are On or Off and a numerical value for the speed.</p> <p><i>Maximum Transport Speed</i> is used to determine when a vehicle enters the “speeding” state. The minimum of Maximum Transport and Maximum Moving speed will be used in this determination; Maximum moving speed is configured under the vehicle setup (Productivity tab).</p> <p>If Maximum Transport Speed is turned off, then the Maximum Moving Speed for the vehicle is used to determine the “speeding” threshold (if Maximum Moving Speed is turned on).</p>
Maximum Operating Speed	<p>The functional speed limit for the implement when coverage logging is on. The options are On or Off and a numerical value for the speed.</p> <p><i>Maximum Operating Speed</i> is used to determine when the vehicle enters a “rushing” state.</p>
Stopped to Delayed Timeout	<p>The length of time the vehicle can be paused before the vehicle is considered delayed. The options are On or Off.</p>

	<i>Stopped To Delayed Timeout</i> is the amount of time that will pass after the vehicle has entered a “stopped” state before it’s considered to be in a “delayed” state (and the operator may be prompted to select a reason for the delay).
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Setting up an Operator for FarmStream Reporting

Note: The **Enable Operators** feature must be enabled in order for FarmStream to run. This feature is accessed by tapping **Settings** on the Home screen and selecting **Operators and Passwords** or by enabling operators from the Trimble Ag Software using the enable option at **People ⇒ Contacts ⇒ Manage ⇒ Operator Display Sign In**.

Signing in as an operator is not required for Utilization or FarmStream to run, but if you want to see operator information in the application, you must sign in.

To set up operator information, turn on your display. You should see the Operator app. Tap the **Operator** app icon to launch it.

Operators can be created in the **Fleet** or **Farm ⇒ Contacts** page of the Trimble Ag Software. All operators in the display’s organization are automatically sent to the display when it has connectivity. If operators in the Fleet page are changed, any changes will be visible in the Operator app after the app has been killed and restarted, or when the display has rebooted.

Operators can also be created locally on the display, but they will not be sent to the Trimble Ag Software to be seen on the Fleet page unless AutoSync is turned on. These local operators will not show in the menu in the Operator app.

1. Login to the Operator app in order to track who is using the vehicle, for reporting in the Utilization app and FarmStream.
2. Enter or scan your operator PIN to login.

Once logged in, the operator information will be recorded along with any utilization data.

Enabling an Operator for FarmStream Reporting

Note: Enabling operators is required for FarmStream operation. For more details on how to set up the software and display for FarmStream, refer to the FarmStream guide here:

<http://agriculture.trimble.com/software/farmstream-setup/>

If you want to see operator information in your Trimble Ag software application as part of a data transfer, then there must be an operator enabled to use Precision-IQ, with the Enable Operators setting active.

For details on how to manage operators using Trimble Ag software, visit:

<https://agriculture.trimble.com/software/support/fleet-help/#OperatorsScreen>

Once logged in, the operator information will be recorded along with any utilization data.

Using Data Transfer Wirelessly

Once Precision-IQ is configured, the FarmStream utilization data collected is sent to Trimble Ag software as often as every few seconds. When you enter the Run screen to perform a task, Precision-IQ begins to record the

utilization data and it can be sent. For Office Sync file based data transfer, data is sent according to the settings described in Configuring Office Sync Settings:

- Hourly.
- On job completion (tap the Stop button to end a run).
- When display powers up.

For details on what to do with the utilization data sent to Trimble Ag software, visit:

<https://agriculture.trimble.com/software/support/fleet-help/#Utilization>

Transferring Data Wirelessly to the Display Using Trimble Ag Desktop Software *(for Precision-IQ Firmware Version Below 6.xx)*

For details on how to access transferred files in the Trimble Ag Software visit:

<https://agriculture.trimble.com/software/support/fleet-help/#DownloadingandUploadingFiles>

Follow the steps below to upload data to the display using desktop software:

1. Go to the **Online** tab in the desktop software and log on with your Trimble Ag Software username and password. If applicable, select the organization you are working with.
2. Click **Send Resources**.

Use the Send Resources button to specify data you want uploaded to Trimble Ag Software server so it can be downloaded to your display.

3. In the **Farms/Fields** tab, select the Clients/Farms/Fields to upload.
4. In the **Inputs** tab, select the Machines/People/Supplies to upload.
5. Select **Job Types** to be sent.
6. Select the **Options** tab to send field boundaries and/or guidance lines.
7. Click **OK**.
8. Select **Trimble Display(s)** to upload resources to and click **OK**.
9. Selected resources are added to Outbox for mobile devices that you chose.

As soon as software communicates with Trimble Ag Software server, data is uploaded and moved to the device Inbox where it stays until the display downloads the resources.

Using Data Transfer Manually

Precision-IQ supports data transfer using a USB drive (also known as a *thumb drive* or *flash drive*). To manually transfer data, you must insert a USB drive into one of the USB ports on the display, and then select the files you want to transfer.

Follow the steps below to transfer data manually:

1. Insert a USB drive into one of the USB ports on the display.
2. From the Precision-IQ Home screen, tap the **Data Transfer** button to display the Data Transfer screen.
3. Select a data transfer action from the list below:
 - [Data Transfer Between Precision-IQ Displays](#)
 - [Export Precision-IQ Resources to a USB Drive](#)
 - [Import Resources to a Precision-IQ Display](#)
4. Once the data transfer is complete, you can remove the USB drive from the display.

See also:

[Supported Data Transfer Functions](#)

[Delete a Precision-IQ Resource](#)

USB VDB Transfer

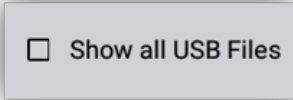
When you transfer data, saved vehicles do not include the vehicle configuration file (.vdb) for Autopilot. To transfer this configuration data:

1. Connect a laptop that has the Autopilot Toolbox software to the serial port of the NavController that contains the vehicle config file you want.
2. Using Autopilot Toolbox, save the config (.cfg) file to the laptop.
3. Transfer the saved config file from the laptop to a USB drive in the folder **AgData/Profiles**.
4. Make sure you have the Precision-IQ application open.
5. Insert the USB drive containing the config file in the USB socket of the display.
6. Insert the USB drive containing the config file in the micro USB adapter cable.

Data Transfer Between Precision-IQ Displays

To copy resources from your Precision-IQ display to a USB drive for use in another Precision-IQ display:

1. Insert a USB drive into the display.
2. On the Home screen, tap **Data Transfer**.
3. On the Data Transfer screen, make sure that the **Show All USB Files** option is **deselected**:



☐ Show all USB Files

4. Select the folders or resources you want to copy and tap the **Copy** button.

Note: Some AgGPS resources can be read by AgData. If you have an AgGPS file with recognizable resources (such as a Field) on the root level of your USB drive, then it will appear along with the AgData resource and can

be copied directly to the display.

Export Precision-IQ Resources to a USB Drive

To convert and copy resources from your Precision-IQ display to a USB drive for use in another display (such as a CFX-750) or to Trimble Ag Software:

1. On the Data Transfer screen, make sure that the **Show All USB Files** option is **selected**.
2. On your USB drive pane, navigate to the location where you want to copy the converted files to.

Note: Use caution for selecting a location. Some USB drives can contain multiple of files and folders. Be sure you know where you want the converted Precision-IQ to be located.

3. On the Internal (display) pane, navigate to the folders and resources you want to convert and select them. Tap the **Copy** button. In the Copy As pop-up window, select a data type (AgData, AgGPS, ISOXML):



Note: Not all Precision-IQ resources can be converted. A warning message will display for those resources that cannot be converted.

4. The resource will be converted to the appropriate format and copied to the USB drive. If you are transferring resources **from** Precision-IQ **to** a USB drive, then the converted resources will appear in an **Output_AgGPS**, **Output_AgData**, or **Output_ISOXML** folder, depending on the file type you want transferred. You should be able to import these resources into your FmX+ or Trimble Ag Software applications.

Caution!



If you are exporting data for use in an AgGPS-supported display, you **must** first move the converted AgGPS folder out of the Output_AgGPS folder to the root level of the USB drive, so that it can be recognized by the display.

Import Resources to a Precision-IQ Display

Precision-IQ can recognize both AgData and AgGPS data types on a USB drive. To import these resources from a USB drive to your Precision-IQ display:

1. On the Data Transfer screen, make sure that the **Show All USB Files** option is **deselected**.
2. Select the folders or resources you want to copy and tap the **Copy** button.
3. Tap **OK** on the confirmation pop-up window.

Supported Data Transfer Functions

Not all resource types can be manually transferred to/from Precision-IQ into other formats (AgGPS, ISOXML). The following table shows the functions and formats supported by the Precision-IQ's data transfer service.

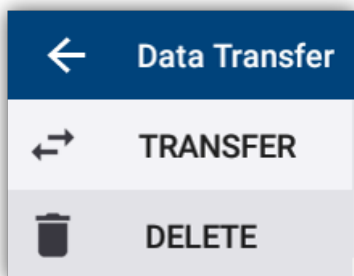
Profile	From Precision-IQ to:		
	USB (AgData)	USB (AgGPS)	ISOXML
Vehicles	✓		
Implements	✓		
Materials	✓		
Fields	✓	✓	✓
Guidance Lines	✓	✓	✓
Tasks	✓		
Users	✓		
Diagnostics	✓		
Screenshots	✓		
Prescriptions	✓		
Point/Line/Area	✓	✓	✓

Delete a Precision-IQ Resource

Note: Only Precision-IQ folders and resources (AgData) can be deleted from your display or USB drive.

You can use the Data Transfer screen to delete configuration files from Precision-IQ or your USB drive.

1. On the Data Transfer screen, tap the **Delete** action in the upper-left corner of the screen:



Note: The Transfer action is selected by default. When you tap **Delete**, the **Copy** button will automatically update to be **Delete**.

2. Drill down or expand the folders that contain the resources you want to delete and select them. (You can select resources from the Precision-IQ display, USB drive, but not both at the same time.)
3. Tap the **Delete** button at the bottom of the screen.

For More Information

Contact your local Trimble Regional Sales Manager.