RUN SCREEN LAYOUT

| Item	Description	Item	Description
❶	**Cut / Fill map –** The difference between the design plane and the survey. Blue areas show where fill is required, green shows where the existing surface is on grade, and red areas show where cut is required.	❾	**Cut/Fill & height map –** Switch between a cut/fill map and a height map. Also view the color scale.
❷	**Status items –** At the top of the Run screen, always visible. Tap any text item to toggle to a single status item with a larger font.	❿	**Virtual lightbar –** When the vehicle is online, the center indicators are green. When the vehicle moves offline, the indicators change to red and move to either side, depending on the line direction.
❸	**Status items tab –** Tap to display text information for operations connected to the FmX integrated display. Can be set to retract automatically.	⓫ ⓬	**Home –** Close a field and return to the start window. **Setup and Configuration –** Change setup and display options when the field is open.
❹	**Vehicle view icon –** Toggle between overhead and trailing views.	⓭	**Run –** Take an instantaneous picture of the current screen.
❺	**Information icon –** Tap to display a larger amount of permanent text for operations relating to the display, while showing the Run screen in the upper right-hand corner.	⓮ ⓯	**Blade step –** Use up and down arrows to manually adjust the grade of your scraper or plow blade. **Design –** Design the field's slope and orientation
❻	**Zoom and Pan icons –** To zoom in and out, tap the magnifying glass; to pan, tap the arrow buttons. To adjust the zoom level, tap the map.	⓰	**Create Benchmark –** Create benchmarks for all FieldLevel II operations to use as a point of vertical reference.
❼ ❽	**Primary cut/fill indicator** – When the blade is below grade, the up arrow is red (thin is close, thick a long way off). When the blade is above grade and cut is required, the down arrow is red; when the blade is on grade, the center is green. **Secondary cut/fill indicator** – For use with tandem and dual scrapers. For dual scrapers, it is the right side; for tandems it is the back scraper.	⓱	**Primary Auto –** Use to enage automatics to the hydraulic valve controlling the blade. When using dual scrapers, this is the left side of the blade; when using tandem scrapers, this controls the front scraper **Secondary Auto –** Use to engage automatics to the hydraulic valve when using dual or tandem scrapers. When using a dual scraper, this controls the right side of the blade; when using tandem scrapers, this controls the rear scraper.

USING THE FIELDLEVEL II SYSTEM ON THE FMX DISPLAY

*NOTE: FOR MORE INFORMATION ON SYSTEM CALIBRATION AND SETTINGS, SEE THE FIELDLEVEL II DOCUMENTATION.*

Surveying the field

Use the *WM Survey* tab to survey the topography of the field. You can then choose to create a design plane of best fit to balance the cut and fill values to the preferred ratio.

1. In the *WM Survey* tab, select *Boundary* and then tap **Record**. Drive the vehicle around the boundary of the field—the boundary is recorded with a line back to the start point. The boundary must be a complete loop.
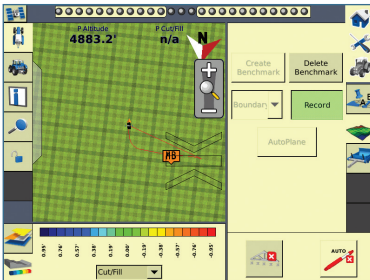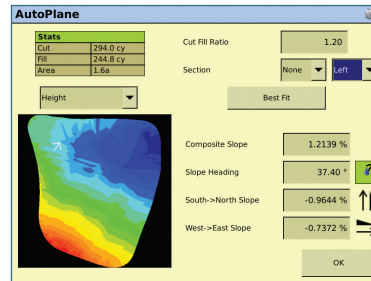

2. When you have driven the complete boundary, tap **Record** to stop logging:
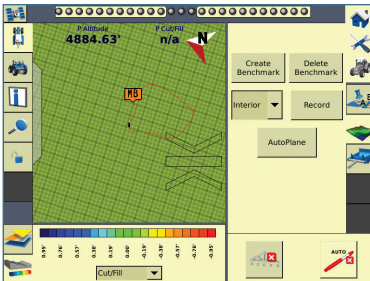
3. Change the *Boundary* setting to *Interior* and drive around the interior of the field, gaining enough coverage to produce a height map. You can change the survey point density in the *WM Survey* settings (anywhere between 5 ft to 100 ft):
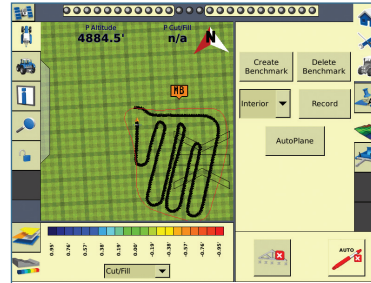

4. Tap **AutoPlane**. Cut and Fill values are shown to a default plane:

5. Edit the Cut / Fill Ratio depending on your preference and then tap **Best Fit**. The system generates a new plane, balancing the cut and fill as efficiently as possible:
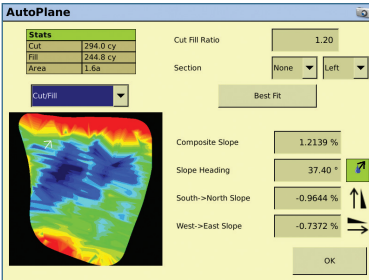
6. If required, edit the slope and heading values in the *Autoplane* screen and then tap **OK** to return to the Run screen. If you now tap **Auto**, the scraper blade is driven to the design depth.
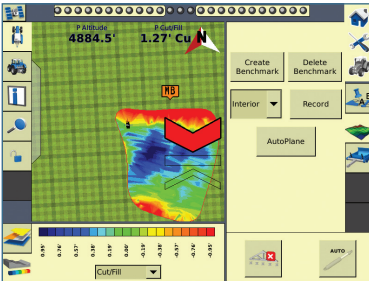
7. Switch between height mode and cut/fill mode at the bottom of the Run screen. The color scale represents the colors on the map.
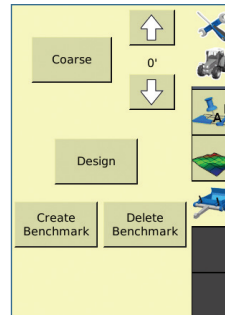
Leveling a field

To quickly level a field with the Plane Editor, use either the Flat Plane (GPS) or Flat Plane (Laser) leveling models.

Note: Only use Flat Plane (Laser) for fields that were previously leveled with a laser.

Start measuring benchmarks at locations on the field where you want to be on grade, or as a reference point for grade.
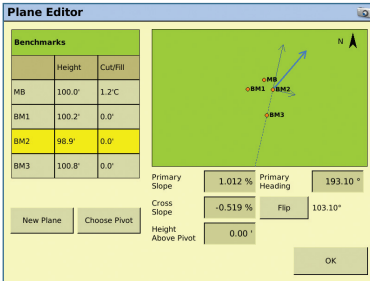
1. On the *FieldLevel* tab, tap **Design**:

In the *Plane Editor* screen, you can see your measured benchmarks, and the current cut and fill values at the benchmarks.
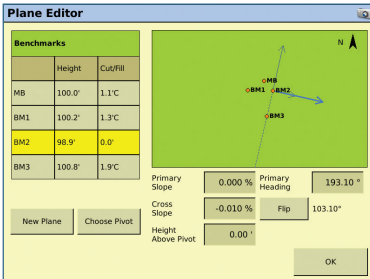
2. Tap **New Plane** to design your plane through the benchmarks. In this example a plane is built through all three benchmarks. The primary slope is referenced from the Master Benchmark to Benchmark 1:
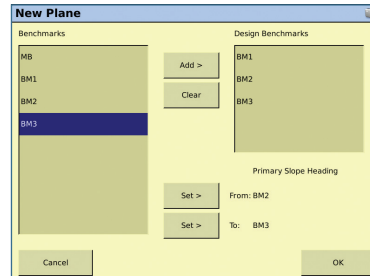
3. Tap **OK**. The screen now shows the updated direction of the slope, as well as the primary and cross-slope directions:

Plane Editor			
Benchmarks			N
	Height	Cut/Fill	
MB	100.0'	1.2'C	
BM1	100.2'	0.0'	
BM2	98.9'	0.0'	
BM3	100.8'	0.0'	

Primary Slope: 1.012 % Primary Heading: 193.10 °
Cross Slope: -0.519 % Flip: 103.10°
Height Above Pivot: 0.00 '

New Plane   Choose Pivot   OK

4. You can configure the primary slope and primary heading values required for your field. In this example, the primary slope was changed to 0%, and the cross slope was changed to -0.01%. The cut and fill values on the benchmarks are updated:
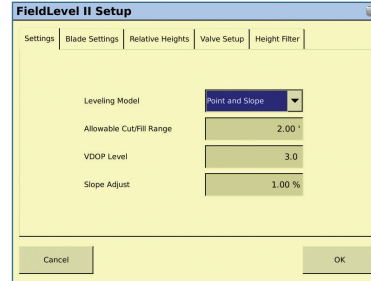

Plane Editor			
Benchmarks			N
	Height	Cut/Fill	
MB	100.0'	1.1'C	
BM1	100.2'	1.3'C	
BM2	98.9'	0.0'	
BM3	100.8'	1.9'C	

Primary Slope: 0.000 % Primary Heading: 193.10 °
Cross Slope: -0.010 % Flip: 103.10°
Height Above Pivot: 0.00 '

New Plane   Choose Pivot   OK

Note: You can create a 0 cut/fill on any benchmark by changing the Pivot point and adjusting the height above pivot to 0.00. The pivot benchmark is used as the rotation point if slopes are adjusted.

Using Point and Slope

Use the Point and Slope method to control your scraper blade to a certain grade regardless of the direction of travel.

1. In the *FieldLevel II Setup* screen, set the *Leveling Model* to Point and Slope:
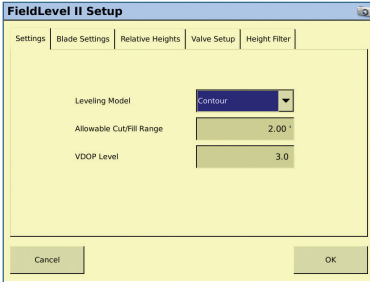

FieldLevel II Setup				
Settings	Blade Settings	Relative Heights	Valve Setup	Height Filter

Leveling Model: Point and Slope
Allowable Cut/Fill Range: 2.00 '
VDOP Level: 3.0
Slope Adjust: 1.00 %

Cancel   OK

2. Set the *Slope Adjust* field to the amount of grade you want to change on the fly with each button press.
3. Tap **OK**.
4. In the Run screen, set the blade to the required depth and then tap **Auto**. The FieldLevel II system now controls the blade to keep it at the required slope as you drive the vehicle:
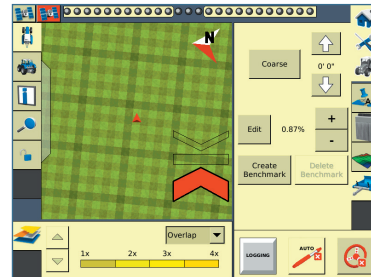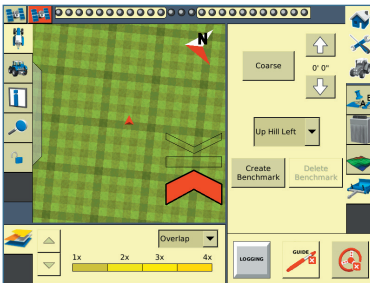

– To adjust the slope, tap the + and - buttons, or alternatively edit the slope.
– To offset the blade up and down, use the ⬆ and ⬇ arrows.

Using Contour

1. In the *FieldLevel II Setup* screen, set the *Leveling Model* to Contour:

FieldLevel II Setup

| Settings | Blade Settings | Relative Heights | Valve Setup | Height Filter |

Leveling Model   Contour

Allowable Cut/Fill Range   2.00 "

VDOP Level   3.0

Cancel   OK

2. In the Run screen, drive the vehicle to the point where you want to start the first levee and then set the Master Benchmark at this point.
3. Set the side of the vehicle that is uphill. When you tap **Guide**, drive the vehicle forward and follow the lightbar to keep the vehicle on the same contour:
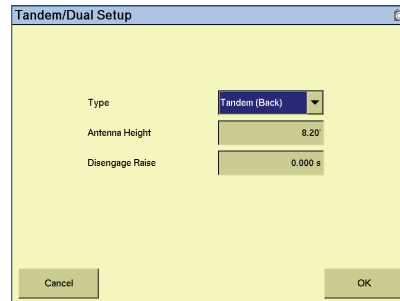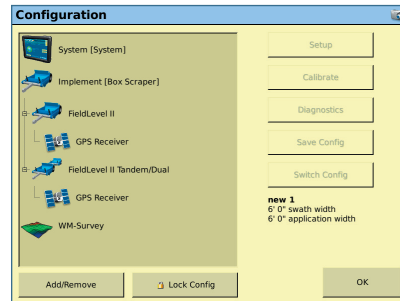
Coarse   0' 0"

Up Hill Left

Create Benchmark   Delete Benchmark

Overlap

1x   2x   3x   4x   LOGGING   GUIDE

– To move to the next levee, turn the vehicle around and change the *Up Hill* direction.
– To step the blade up or down, use the ⬆ and ⬇ arrows to achieve the required offset, and then follow the lightbar to keep at the correct grade.

## Using the Tandem and Dual plugin

Use the FieldLevel II Tandem and Dual plugin for leveling applications where you want to control both ends of a scraper blade (dual) or two scrapers towed behind the tractor (tandem).

1. Add the *Tandem/Dual* plugin:
   – From the *Configuration* screen, tap **Add/Remove** and then select the *Tandem/ Dual* plugin.
   – Set the GPS receiver under *Field Level* to the primary receiver.
   – Set the GPS Receiver under *Tandem/Dual* to the secondary receiver:

Configuration

System [System]   Setup

Implement [Box Scraper]   Calibrate

FieldLevel II   Diagnostics

GPS Receiver   Save Config

FieldLevel II Tandem/Dual   Switch Config

GPS Receiver   **new 1**
6' 0" swath width
6' 0" application width

WM-Survey

Add/Remove   Lock Config   OK

Tandem/Dual Setup

Type   Tandem (Back)

Antenna Height   8.20'

Disengage Raise   0.000 s

Cancel   OK

2. You can now do the following:
   – There are two Auto buttons in the Run screen: **P: AUTO** and **S: AUTO**. For a dual system, you must activate both these buttons to run in Auto mode—if you do not do this only one side of the scraper moves. For Tandem scrapers, activate **P: AUTO** to run Auto mode on the front scraper only. To switch to the back scraper, disengage **P: AUTO** and engage **S: AUTO**.
   – To offset both the primary and secondary at the same time (for the dual system), use the ⬆ and ⬇ arrows in the *FieldLevel* tab:
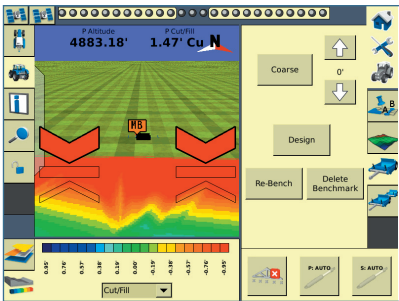
   – To offset the primary and secondary independently, open the *Tandem / Dual* tab and then use the ⬆ and ⬇ arrows to offset either the left side of the blade (dual) or the front scraper (tandem).
   – To offset either the right side of the blade (dual), or the back scraper (tandem), open the *Tandem / Dual* tab and then use the ⬆ and ⬇ arrows:
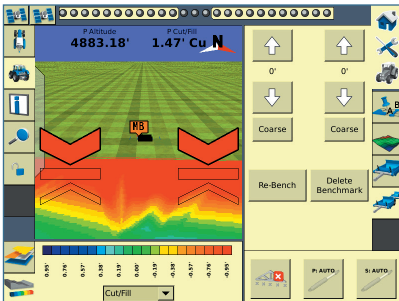

Calibrating the FieldLevel II valve modules

The system performs its calibration sequence to test the speed at which the blade raises and lowers. This process takes approximately 8–10 minutes for each valve.

For the Primary FieldLevel valve:
1. From the *Configuration* screen, select the FieldLevel II plugin and then tap **Calibrate**. The *FieldLevel Calibration* screen appears:
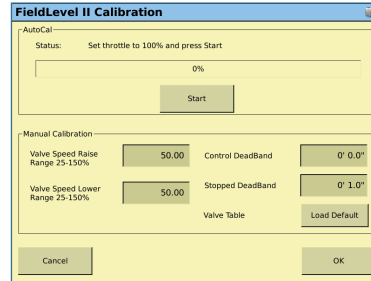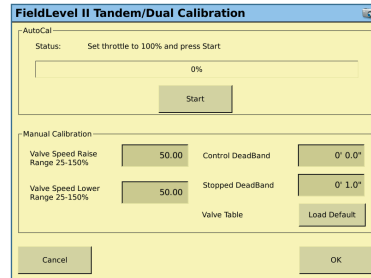

2. Set the vehicle throttle to 100% and then tap **Start**.
Note: To manually calibrate the valve, enter values in the 3 Manual Calibration fields and then tap OK.

For the Secondary FieldLevel valve (Tandem/dual):
1. From the *Configuration* screen, select the Tandem/dual plugin and then tap **Calibrate**. The *Tandem/Dual Calibration* screen appears:


2. Set the vehicle throttle to 100% and then tap **Start.**
Note: To manually calibrate the valve, enter values in the three Manual Calibration fields and then tap OK.

## Importing designs from the MultiPlane software

You can use the MultiPlane software with the survey data logged with an FMX integrated display to create a design surface:

1. Once you have manipulated your design surface, export it as a control file (*.GPS) and store it in the \AgGPS\Designs\ folder on a USB memory drive.
2. From the *Support* tab on the *Home* screen, tap **Data Files**.
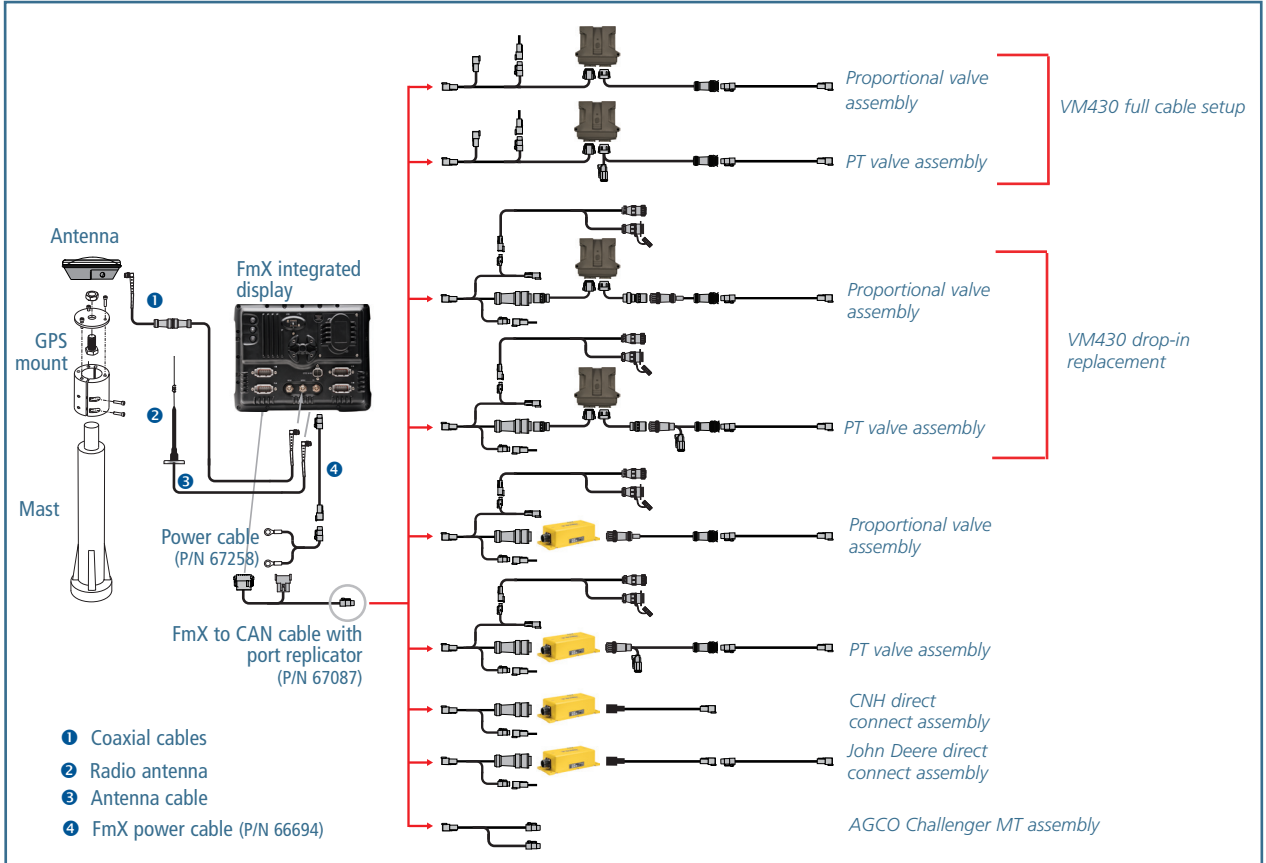3. In the *Data Files* screen, select *Designs* from the left-hand column and then tap **Copy**:
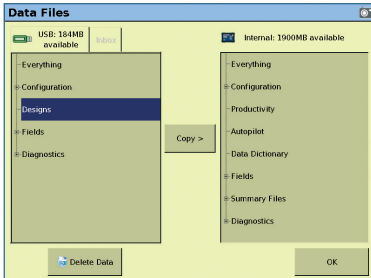
4. Set the Leveling Model to *MultiPlane Design*.
5. Open the field where you measured your survey data to ensure that the Master Benchmark is in the same place. Alternatively, create a new field, and rebench on the same Master Benchmark that you used in the survey.

The MultiPlane design appears:
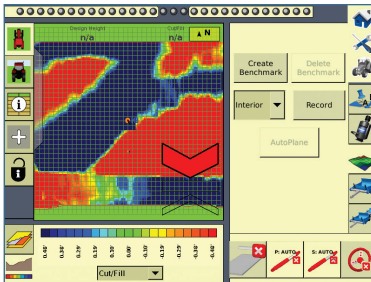
CONNECTING THE SYSTEM

Once the FieldLevel II system has been installed, add the FmX integrated display as shown:

Antenna

FmX integrated display

GPS mount

Mast

Power cable
(P/N 67258)

FmX to CAN cable with port replicator
(P/N 67087)

❶ Coaxial cables
❷ Radio antenna
❸ Antenna cable
❹ FmX power cable (P/N 66694)

Proportional valve assembly

PT valve assembly

VM430 full cable setup

Proportional valve assembly

PT valve assembly

VM430 drop-in replacement

Proportional valve assembly

PT valve assembly

CNH direct connect assembly

John Deere direct connect assembly

AGCO Challenger MT assembly

Trimble