



# JOHN DEERE

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AG MANAGEMENT SOLUTIONS

## **iGuide** **Optimization and Troubleshooting Guide**

Last Updated  
**August 2009**

# iGuide Optimization and Troubleshooting Guide

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**This Guide is meant to assist Dealers and Customers tuning iGuide. Pay close attention to the items highlighted in this guide to maximize iGuide performance for your operation.**

## 1. Setting up Dimensions

Dimensions are critical for iGuide best performance. Below there is an explanation about all dimensions required for iGuide and how to check if your dimensions are correct.

### a. Vehicle Offset Dimensions

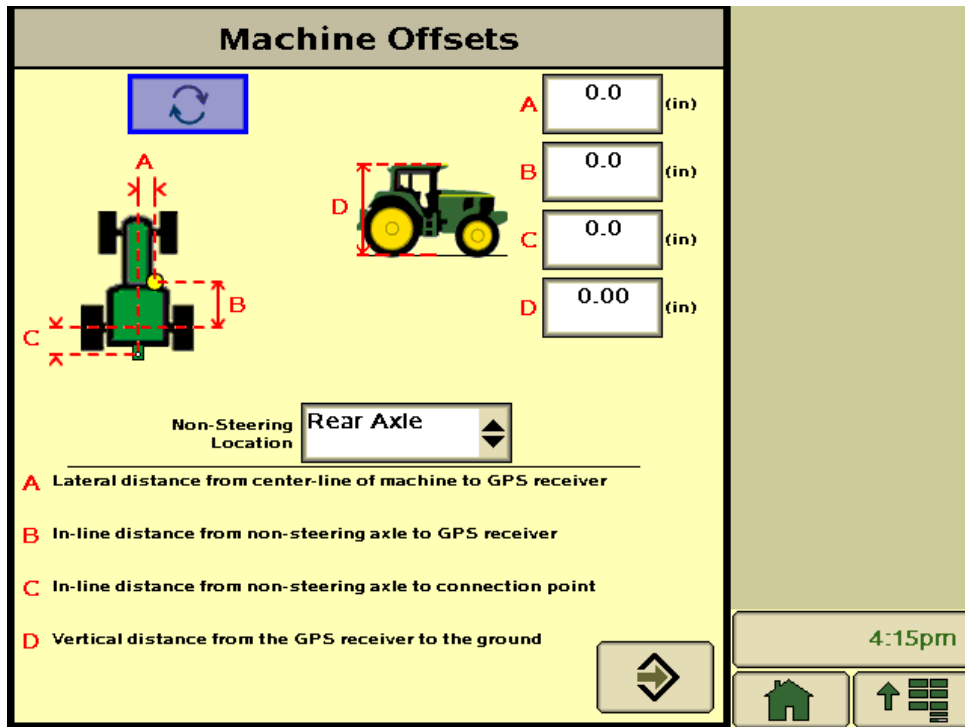


Figure 1- Machine Offsets Page

- ⇒ All four dimensions “A”, “B”, “C”, and “D” are critical for iGuide.
- ⇒ **Note:** Dimensions “D” should match to Receiver Height from Machine Receiver Softkey (Figure 2).



Figure 2- Machine StarFire iTC Softkey

## b. Implement Offset Dimensions

**Offsets**

A 18.0 (ft)  
B 1.0 (ft)  
C 0.0 (in)  
D 18.3 (ft)  
E 0.0 (ft)

**A** In-line distance from connection point to front of implement  
**B** In-line distance from front to rear of implement  
*A+B = Documentation/Swath Control location when in use*  
**C** Lateral distance from connection point to control point of implement  
**D** In-line distance from connection point to control point of implement  
**E** In-line distance from connection point to connection point for 2nd implement. Value only needed if second implement is used.

4:14pm

Figure 3 – Implement Offset Page

- ⇒ Dimensions “A”, “B”, and “D” are critical for iGuide.
- ⇒ Dimension “E” is not required for iGuide
- ⇒ **Note:** Dimension “C” is required when using a non centered implement.

c. Implement GPS Offset Dimensions

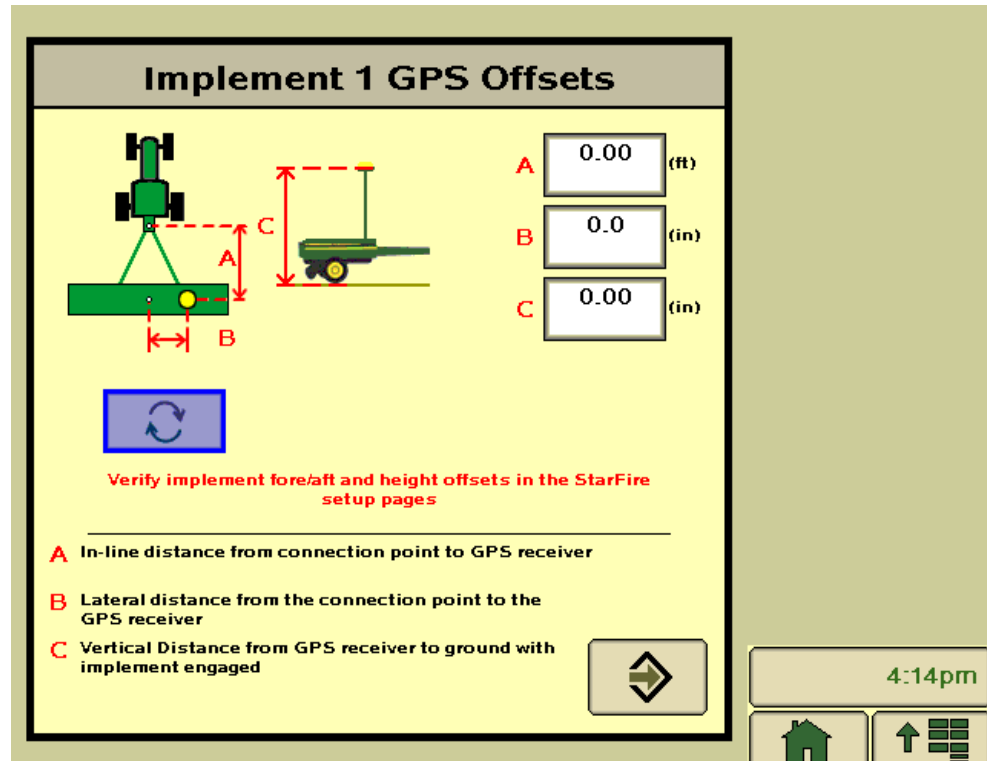


Figure 4 – Implement GPS Offset Page

- ⇒ All three dimensions “A”, “B”, and “C” are critical for iGuide
- ⇒ **Note:** Dimension “C” should match Receiver Height from Implement Receiver Softkey (Figure 5).



Figure 5 – Implement StarFire iTC Softkey

**d. Checking if in Line Distance Between Receivers is Correct:**

Since dimensions are critical for iGuide we need to check if the in-line dimensions between vehicle receiver and implement receiver entered in GS2 2600 Display are correct.

**Measuring in line dimension from receiver to receiver:**

Measure the distance between the Vehicle Receiver to the Implement Receiver and then compare to the total of dimensions “B” and “C” from **Vehicle Offset page (Refer to Figure 1)**, and dimension “A” from the **Implement Receiver Offset page (Refer to Figure 4)**. The distance between and the distance found in adding these three dimensions, should match.



**Figure 6 – Receiver’s Dimension**

**Example:**

- a- Distance between vehicle and implement receivers = 255 inches
- b- Dimensions “B”= 55” Vehicle Offset page and dimension  
“C”= 65” Vehicle Offset page and dimension  
“A”= 135” Implement Receiver Offset page  
Total = 255 inches

**Note:** when measuring the distance between vehicle and implement receivers, measure from the middle of vehicle receiver to the middle of the implement receiver.

**Note:** For articulated tractors, the distance from receiver to connection point is B subtracted from C (i.e. distance = “C” – “B” + “A”)

## 2. Tuning Slope Compensation

Slope Compensation works as a look ahead for the vehicle. It helps the system in moving the vehicle up the hill to keep the implement on the guidance line.

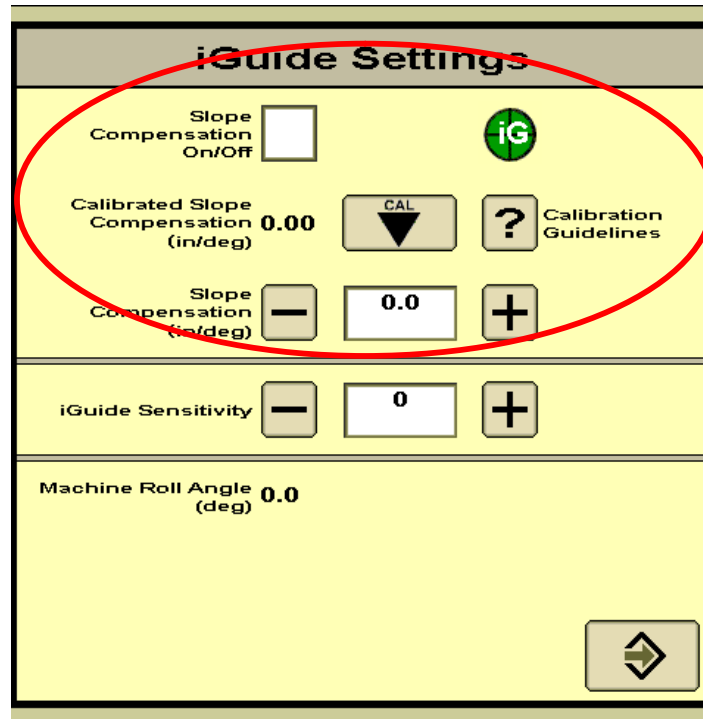


Figure 7 – iGuide Settings Page

### Typical Slope Compensation values

Slope Range	Typical Value	
	Inches/degree	Cm/degree
0 - 2	0.5	1.3
2 - 5	0.5 – 1.5	1.3 – 3.8
5 >	0.8 – 3.5	2.0 – 8.9

- ⇒ 0° - 2° degrees - May not be needed.
- ⇒ 2° - 5° degrees - Provides a moderate amount of machine correction and is recommended to be turned on.
- ⇒ 5° and above - Slope Compensation is recommended to be on.

**Note:** If upon calibration, slope compensation value is above 4.00, calibrate again. Recalibration is recommended to verify a consistent slope compensation value. If a consistent value is not achieved, review the slope compensation guidelines.

**General Slope Compensation Guidelines:**

1. iGuide must be active to calibrate
2. Calibrate at operating speed and with implement at operating depth
3. Do not calibrate when:
  - ⇒ Roll angle is less than 2 degrees
  - ⇒ Direction of roll angle may change
  - ⇒ On tight curves
  - ⇒ A line acquisition is occurring
4. Slope compensation may not be required on slopes less than 5 degrees
5. Stop calibration after calibrated slope compensation value stabilizes

### 3. Tuning iGuide Sensitivity

Tuning iGuide Sensitivity properly will ensure that the system will respond fast to line and heading acquisition.

iGuide Sensitivity works in a similar way as the AutoTrac Sensitivity, and will be different according to the soil conditions, machine, and implement models. In general the iGuide Sensitivity will be lower if the soil condition is harder, and will be higher if the soil condition is softer.

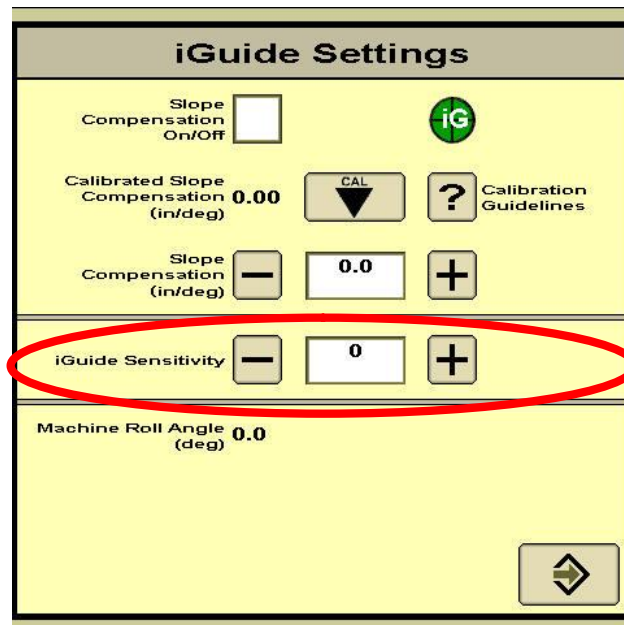


Figure 8 – iGuide Settings Page

**a. Adjust AutoTrac Steering sensitivity for the vehicle.**

1. Verify that the Implement Guidance Mode is “None”
2. Refer to GS2 Guidance Owner’s Manual for process of tuning steering sensitivity.

**Note:** For some platforms such Four Wheel Drive tractors is recommended to have a higher AutoTrac Sensitivity for best performance

**b. Adjust iGuide sensitivity with the implement at work depth.**

**Note:** AMS suggests a range of 15 to 30 as a starting point for the iGuide Sensitivity.

## **4. General Troubleshooting**

### **1– Implement receiver not showing up in the GS2 Display:**

1. Check if you have the Constant Power Extension harness PF90550 or PF90551.
2. Check if the Implement Receiver has the latest software (version 2.3.1385 or higher).
3. Check if the receiver is receiving Switched, Unswitched, CAN Low and CAN High power.
4. Check machine fuse panel for blown fuses.

### **2- Implement GPS loses RTK signal more often than machine receiver:**

1. Check antenna on GPS receiver to make sure it is tight.
2. Verify that the receiver has good line of sight to the base station.
3. Set machine to Vehicle Repeater. Only one Repeater or Vehicle Repeater can be used for selected base station ID.

### **3. Implement Error is not reduced in a reasonable amount of time:**

1. Incorrect machine or implement offsets.
2. iGuide sensitivity is set too low.
3. Slope compensation value is incorrect.
4. Engage iGuide closer to desired path.
5. Adjust control point.

### **4. Machine or implement is “S’ing” around the line:**

1. iGuide sensitivity is too high.
2. Steer sensitivity may also be too high.

### **5. Guess rows having a reoccurring skip/overlap pattern:**

1. Calibrate TCM at implement and machine receivers.
2. Implement GPS offset may need to be changed.
3. Implement row units not properly spaced.

## **6. Reduced Accuracy:**

1. If possible mount the implement receiver as close as possible to the control point. Mounting receiver too close to rear of the machine may result in less accurate performance. Mounting receiver too far from control point may also cause poor performance.

## **7. Adjusting the Control Point dimension (examples):**

**Control Point:** location around which the implement rotates. This is typically the Axle of the implement.

1. If the implement consistently tracks inside of the curve, increase the control point dimension.
2. If the implement consistently tracks outside of the curve, decrease the control point dimension.

## **8 – Slow to line acquisition and s-ing when re-entering the passes at headlands:**

1. Resume switch should be activated when making the turn.

**Note:** Do not wait until the implement is aligned to push the resume switch, this may cause some s-ing at the beginning of the passes.

## **9 – After unloading data in Apex and saving setup back to the data card, iGuide produces wide and narrow guess rows:**

1. Check if the dimensions saved from Apex are the same as when you measured the vehicle, implement and implement receiver offsets.
2. If the dimensions are the same, create a new machine name and model and implement name and model. Then enter the measured dimensions.
3. Recalibrate both TCMs (vehicle and implement). For best results, calibrate the TCM on a flat surface.

**Note:** If the problem still exists, format or use a new data card, then enter the correct dimensions for the vehicle offset page, implement offset page, and implement receiver offset page.

**Note:** If you want to keep the dimensions you measured, create a unique vehicle and implement name. If not every time you unload dimensions from GSDNet it will overwrite your dimensions.

**10– iGuide is over-steering on flat ground (less than 2 degrees):**

1. Verify that Slope Compensation is off.
2. Lower iGuide Sensitivity

**11 – iGuide is too slow to respond for lateral implement draft:**

1. Verify that Slope Compensation is on.
2. Recalibrate Slope Compensation.
3. Increment Slope Compensation value using the increment button until the proper value is found.
4. Raise iGuide Sensitivity.

**12- After Slope Compensation Calibration iGuide calculates a high value:**

1. Check if iGuide was Active during the calibration.
2. Check if calibration was performed on ground with less than 2 degree of roll angle.

**13- iGuide does not work properly with Row Crop Cultivation:**

1. iGuide was not designed to work on Row Crop Cultivation.

**14- Poor performance with Articulated Tractors:**

1. Check if **Rear Axle** has been selected as Non Steer Axle.
2. If yes, change to **Front Axle** and then re-measure the **Vehicle Offset Dimensions**.

**15. Points to Remember:**

1. In iGuide mode remember that the error on the display is the error at the implement. The error for iGuide may be higher on the display than what the machine error was when the system was in normal AutoTrac mode.

2. iGuide may not perform as well in tight turns or end turns as it does on more gradual curves; especially, on severe slopes when the implement is sliding down the hill.
3. iGuide is a reactive system, for the most part, it can only respond to the implement errors.
4. System performance can be affected by several factors on both the machine and the implement. Such as: ballasting, tire inflation, hitch play, amount of weight on the implement (seed, fertilizer, chemical), second implement (air cart, tank), ground engaging equipment in proper working order, and all the offsets, values and sensitivities in the GreenStar 2 2600 Display.
5. Always verify correct implement dimensions when using the “out of box” dimensions from the GreenStar 2 2600 Display or Apex.