GPS Selection Guide

Trimble FMX 1000 & Case IH FM 1000
Trimble CFX 750 & Case IH FM 750

	Precision Parts	Ref Doc	
		750	1000
with Hydraulic Steer - **Trimble** Aftermarket	725599	955443	955439
with Hydraulic Steer - **Case IH** Factory	727131	955444	955440
with Assisted Steer (Non-Hydraulic)	727060	955445	955441
No auto steer with 12 Pin Duetsch	727060	955445	955441

EZ Guide 500 & 250

	Trimble #			
	500	250		
with Assisted Steer (Non-Hydraulic)	725599	725599	64045*	
No auto steer	725599	725599	64045*	955447
No auto steer with 12 Pin Duetsch	727060			
with Hydraulic Steer - **Trimble** Aftermarket	725599			

*order part from Trimble

John Deere

All GS Displays & StarFire Receiver	727124	955451

Case Pro 700 & Pro 600

with Hydraulic Steer - **Case IH** Factory	727131	955452
with Trimble 372, 262, 252 & 162	727131	955453

Agleader Integra, Versa, & Insight

	Agleader #		
with a ParaDyme System	725599	4002226-15*	
with a Steer Command / GeoSteer System	725599	4003263-6*	
with Hydraulic Steer - **Trimble** Aftermarket	725599		
with Trimble 372, 262, 252, & 162	727131		
No auto steer with Serial Port	725599		
with Agleader GPS6000/6500	725599		
with Agleader GPS1500	727027		

*order part from Agleader

Lightbar Systems with Serial Connections

use harness	725599	

SeedSense®

Trimble FMX/FM 1000

- ## with Hydraulic Steer - Trimble Aftermarket

Installation & Configuration Guide for Harness 725599:

Summary: In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that must be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 HTZ**

- GGA: Time, position and fix type data.
- RMC: Time, date, position, course and speed data.
- VTG: Course and speed information relative to the ground.

Baud Rate: 19200 or 38400

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Trimble FMX/FM 1000:

- ## with Hydraulic Steer - Trimble Aftermarket

   ## Precision Planting Harness: 725599 (use the Null End)

Null -

- Standard

Connecting 20/20 to Trimble FMX/FM 1000 with Nav II Controller

First step is to locate your Nav II controller in your cab. This is typically located behind your operator's seat or underneath. The Nav II behind the seat will typically be in behind a removable plate under the cargo netting behind the operator's seat.

Location of the NAV can vary from behind the seat in the panel (Case Magnum) to under the cab (CAT challenger), to outside the back window (AGCO), left of the seat (Deere) and various other locations. The harnesses pictured are only installed on AFTERMARKET installations. Factory installation of Accuguide on Case vehicles have different harnesses than pictured. (May require the 725599, 727131, or a special round connexal adapter to 725599 configurations)
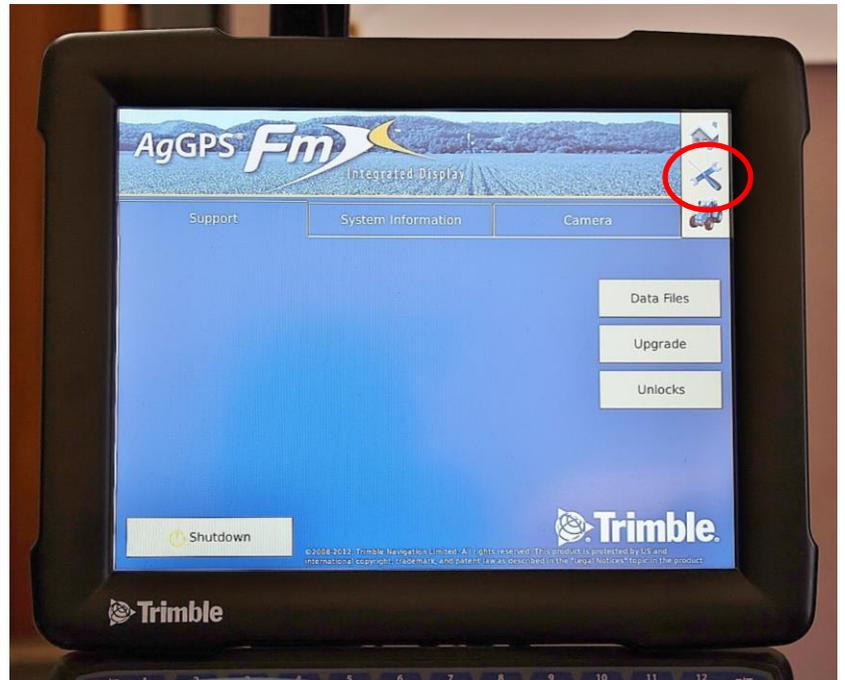
The 725599 Harness connects to the 9 pin serial port (Laptop with LED Light flashing rapidly). To locate the serial port on the Nav II first find the Deutsch connector on the Nav II (it is the small of the two plugging into the Nav II). Then connect the Null 4 pin connector to the GPS connector on the 20/20.
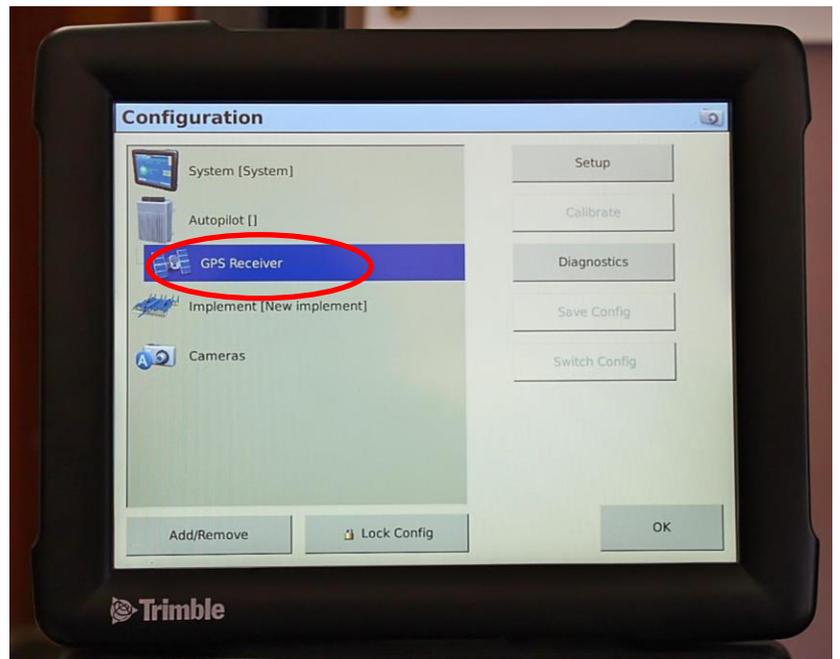
Display Configuration:

Next we will look at visual images giving step by step instructions to output NMEA messages from the Trimble FMX/FM 1000:

Step 1: Locate the wrench in the upper right hand corner of the display**.**
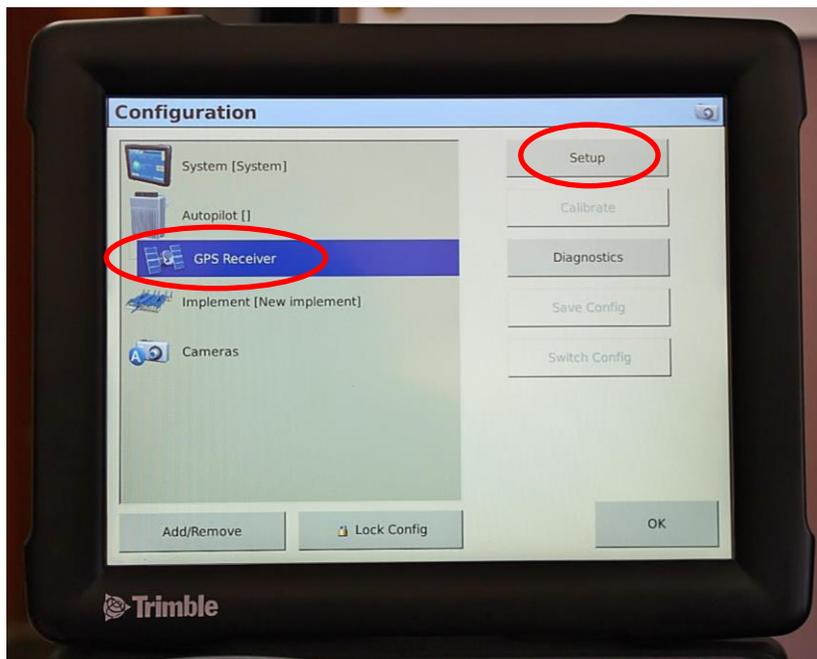

Step 2: Now that you are in the configuration screen you will see a button for GPS receiver.

Note: If you are running a system without a NAV II controller the image below will show a satellite instead of a NAV II controller
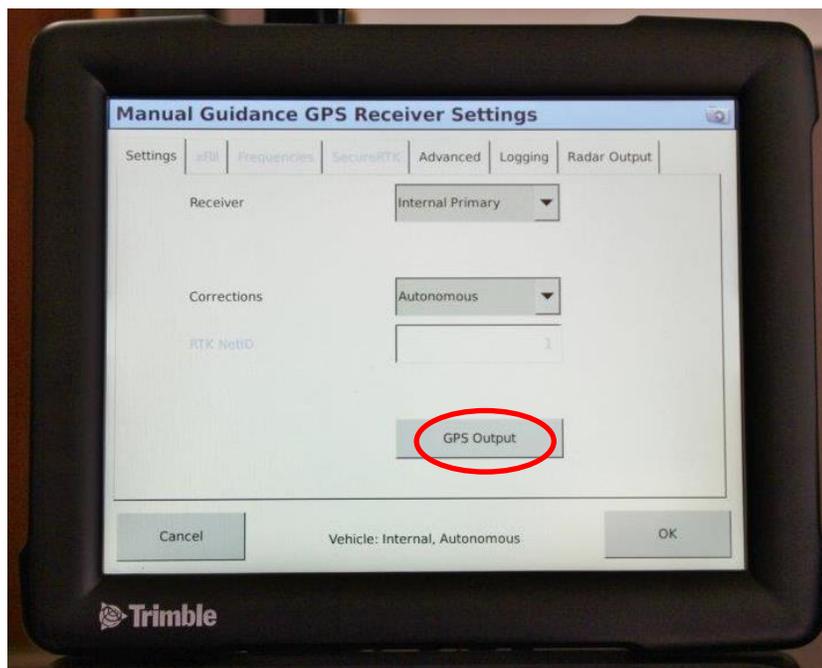
Step 3: After selecting GPS Receiver press Setup.

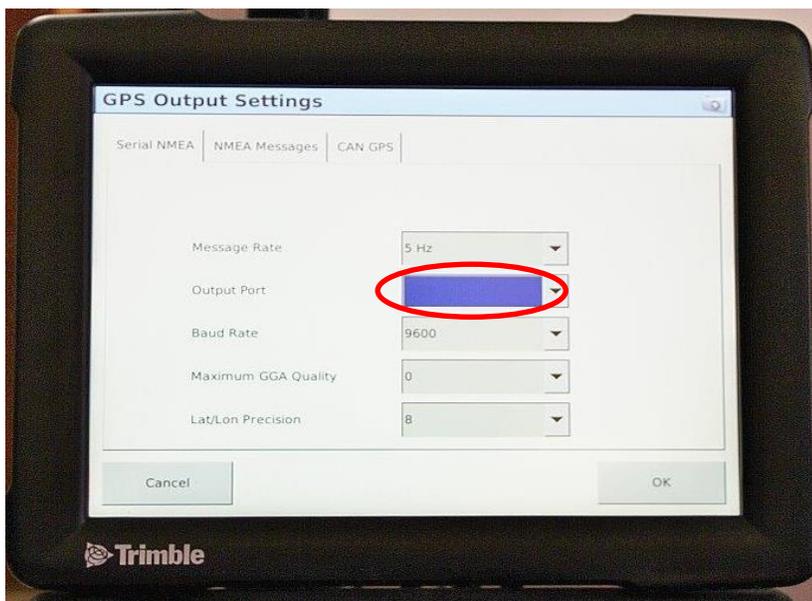**This will take you to the AutoPilot guidance GPS receiver settings**
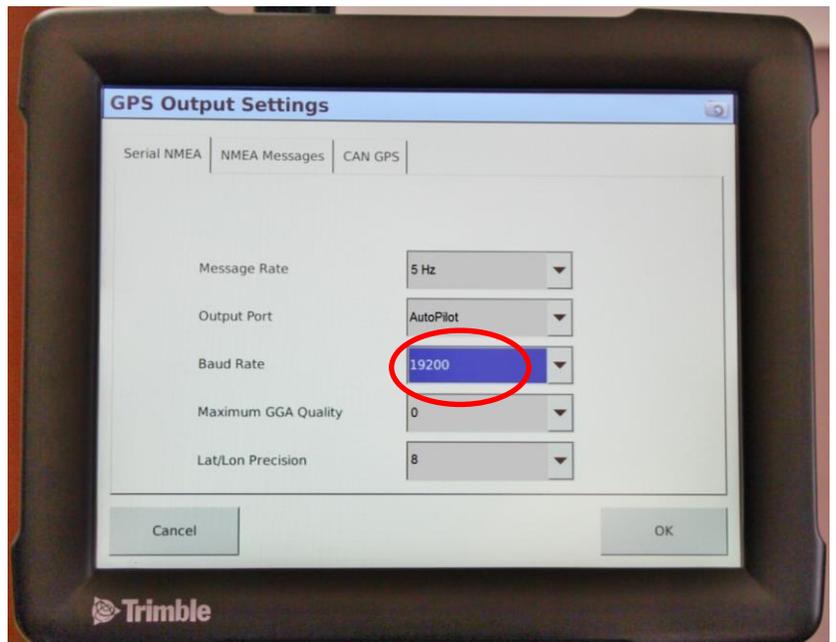

Step 4: Select GPS Output

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Step 5: NMEA output will need to be setup: Press the down arrow next to Message Rate. This will be set at **5 Hz**
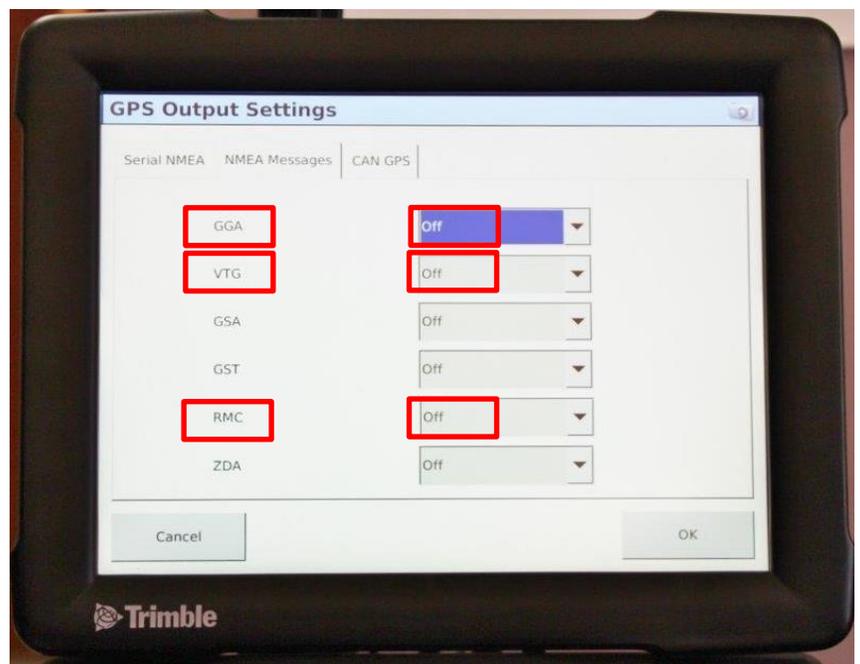

Step 6: Now we will tell the Trimble FMX/FM1000 which port to send the NMEA messages through. The output port that needs to be selected with say **AUTOPILOT**

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Step 7: Precision Planting requires a baud rate of 19200 or 38400. This can be selected from the down arrow shown below.
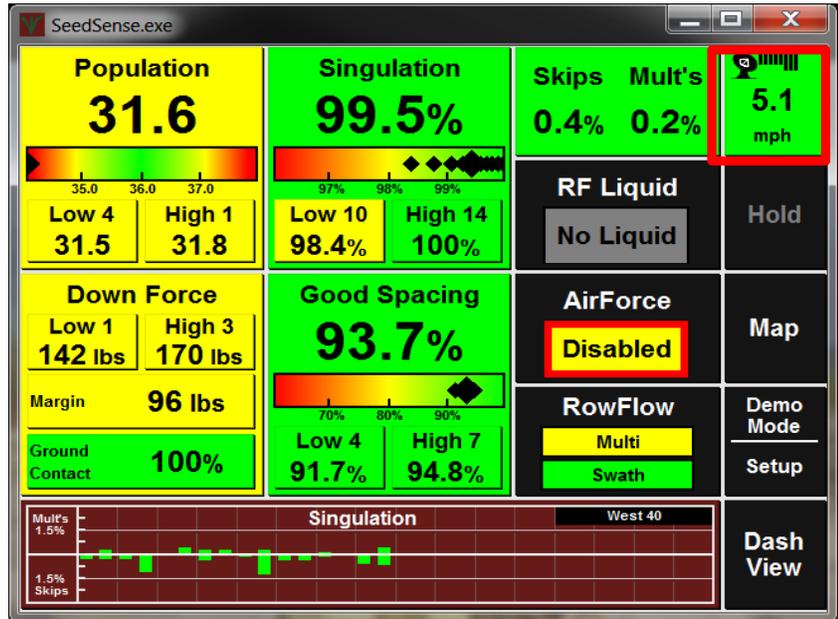

Step 8: Press NMEA Messages: The 20/20 SeedSense requires NMEA strings **GGA, VTG**, **and RMC** to be turned on.
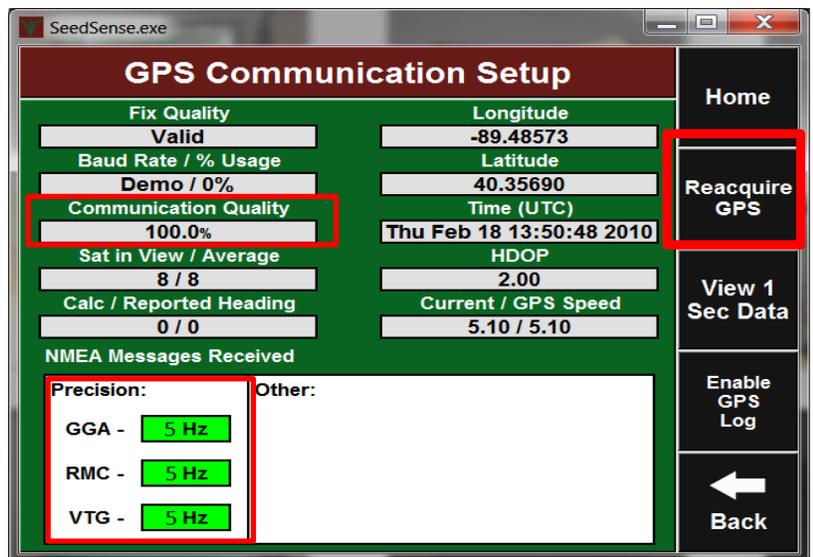
To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button

First press REAQUIRE GPS: Then Verify Communication quality and NMEA Messages

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Setup Tips/Troubleshooting

Problem: AutoPilot controllers (NAV2) output the GPS location of the rear axle, rather than the GPS location of the antenna.

Solution: In this case, enter the "Forward" distance in the 20/20 as 0 (Setup / Systems / GPS / Tractor / Forward, C).

Models Included: *This may apply to any of the following monitors:* FMX, FM1000, FMD, Insight, CFX 750, EZ-Guide 500, EZ-Guide Plus, DJ Inteli Ag, Pro600, Pro700. Any system where the GPS signal comes from the NAV2. This does NOT include a system that is pulling the GPS directly from the Receiver on the top of the cab.

Is my model affected?

To confirm if this applies to your system, a simple test can be completed.

1. Have your tractor parked outside, with the GPS receiver system and the 20/20 powered on, and the GPS connected between them.

2. View the GPS Communication page on the 20/20 (Setup / Systems / GPS / GPS Communication).

3. Record this GPS location on a notepad.

4. Next, change the antenna to rear axle distance on your GPS receiver (Configuration / AutoPilot / Calibrate   / Roll Antenna Compensation / Antenna Distance from Fixed Axle).

5. This can be changed from 0 ft. to 20 ft.

On our initial test, changing the GPS offset changed the coordinates displayed by about 0.00004. If changing this distance on the GPS receiver changes either the latitude or longitude values on the 20/20, then your GPS is outputting the location of the rear axle. Be sure to input the original values into your GPS before leaving this test.

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SeedSense®

Trimble FMX/FM100

- with Hydraulic Steer - Case IH Factory Install

Installation & Configuration Guide for Harness 727131:

Summary: In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that must be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 Hz**

- GGA: Time, position and fix type data.
- RMC: Time, date, position, course and speed data.
- VTG: Course and speed information relative to the ground.

Baud Rate: 19200 or 38400

Precision Planting Harness: 727131

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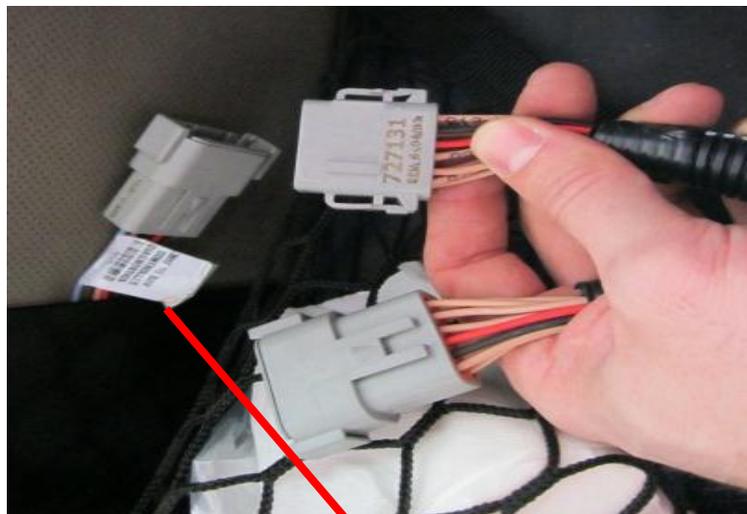# Locating the NAV II controller and installing harnessing

Step 1: Locate the NAV II controller box inside the access panel behind the seat. Remove all four wing nuts. (This location is for Magnum Tractors) Other locations could be 4WD under the "buddy seat" and combines typically found under the armrest or under the cab

Step 2: Slide the NAV II box off of the threaded studs to expose the connectors on its right side. There is a 12-pin Deutsch plug labeled "Controller Diagnostics."

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Step 3: Connect the 12-pin Deutsch connector on the 727131 Trimble GPS Adapter to the 12-pin Deutsch "Controller Diagnostics".
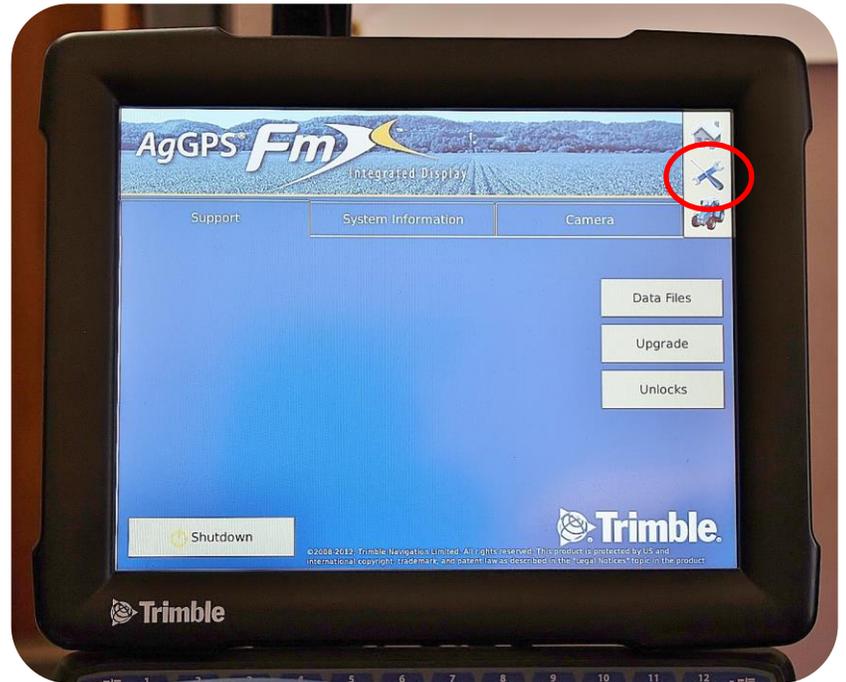
Step 4: Connect the 4-pin AMP "**GPS Port 1&1 2**" to the "**GPS**" port on the SeedSense tractor harness.
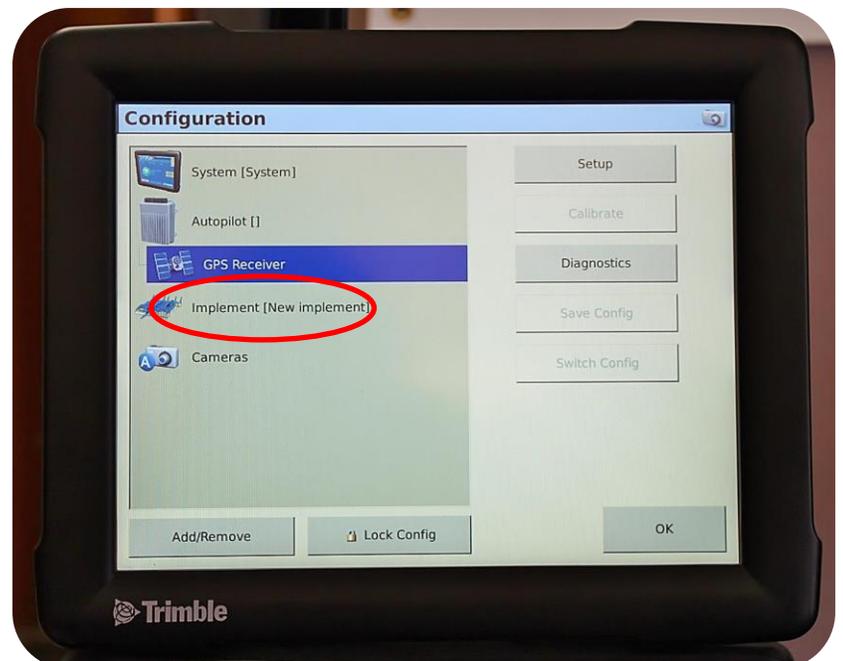
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Display Configuration:

Next we will look at visual images giving step by step instructions to output NMEA messages from the Trimble FMX/FM1000:

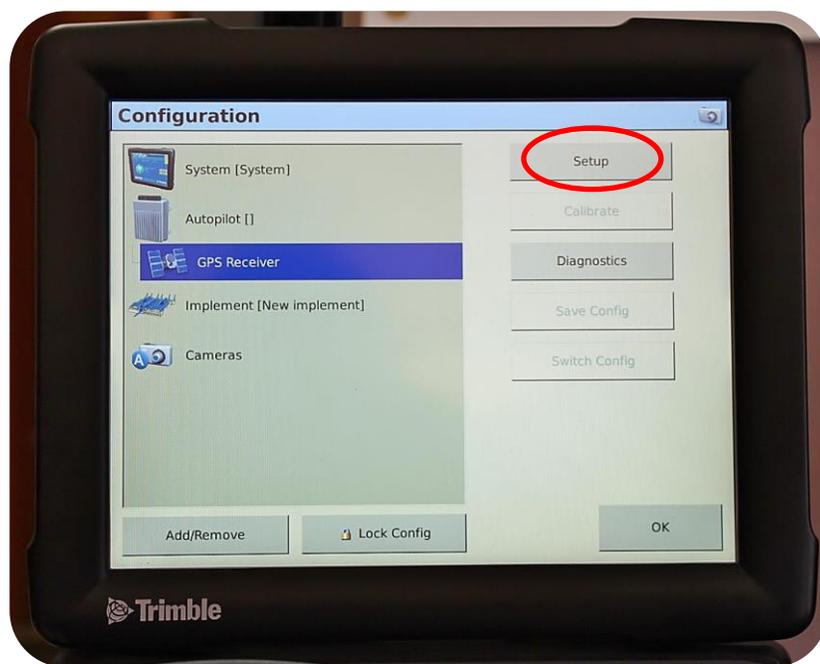**Step 1:** Locate the wrench in the upper right hand corner of the display**.**

Step 2: Now that you are in the configuration screen you will see a button for GPS receiver.

Note: If you are running a system without a NAV II controller the image below will show a satellite instead of a NAV II controller
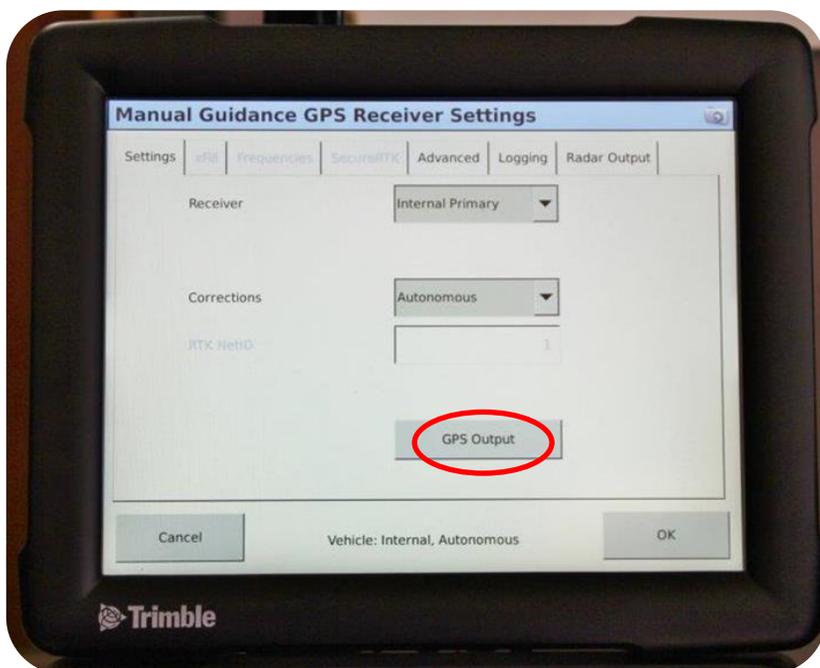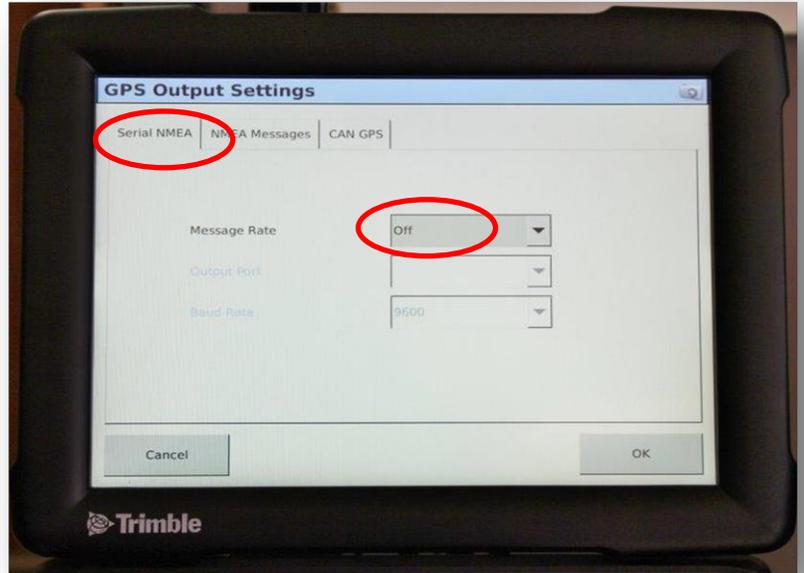

4

Step 3: After selecting GPS Receiver press Setup.

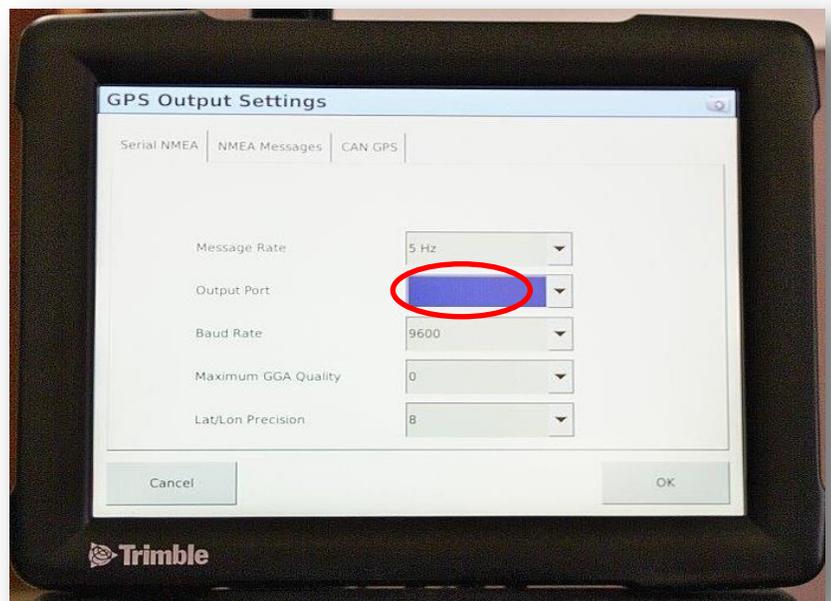 **This will take you to the AutoPilot guidance GPS receiver settings**
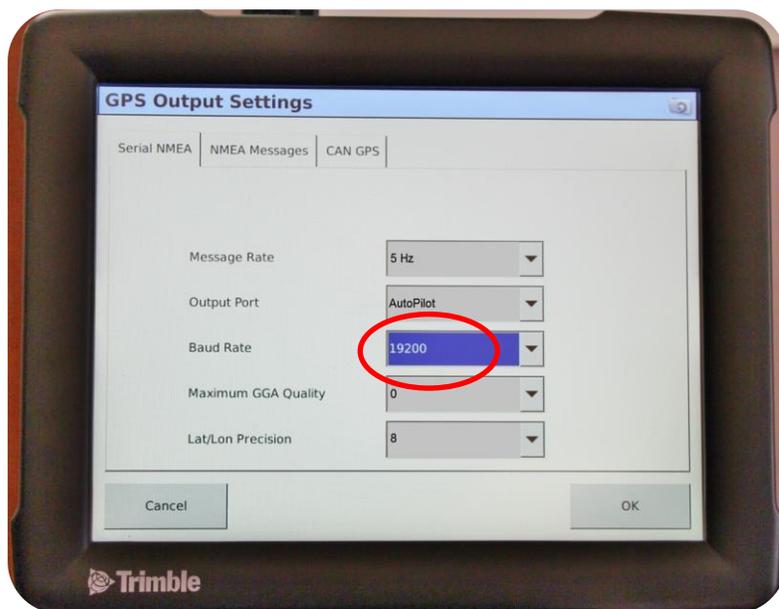

Step 4: Select GPS Output

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Step 5: NMEA output will need to be setup: Press the down arrow next to Message Rate. This will be set at 5 HZ
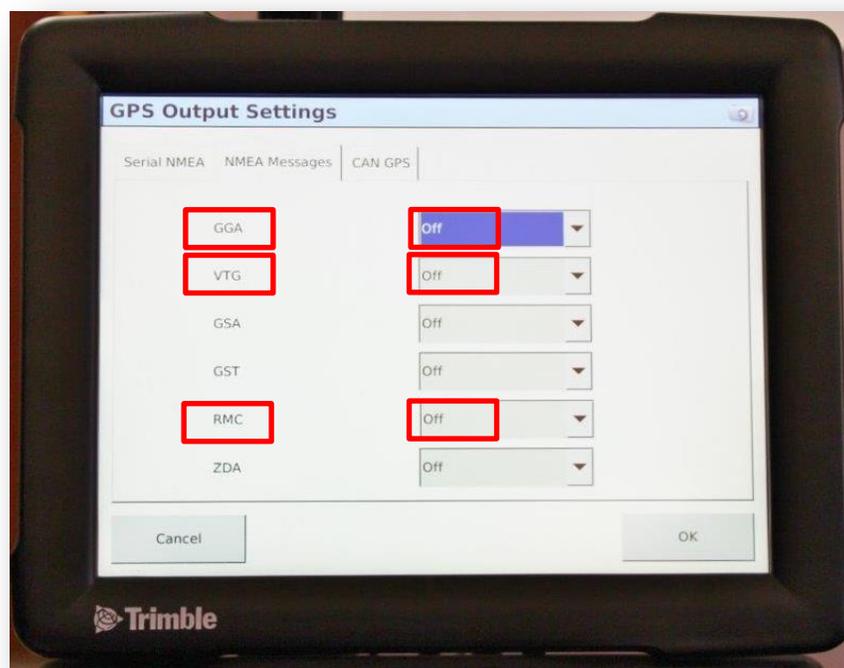

Step 6: Now we will tell the Trimble FMX/FM1000 which port to send the NMEA messages through. The output port that needs to be selected with say **AUTOPILOT**

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Step 7: Precision Planting requires a baud rate of 19200 or 38400. This can be selected from the down arrow shown below.
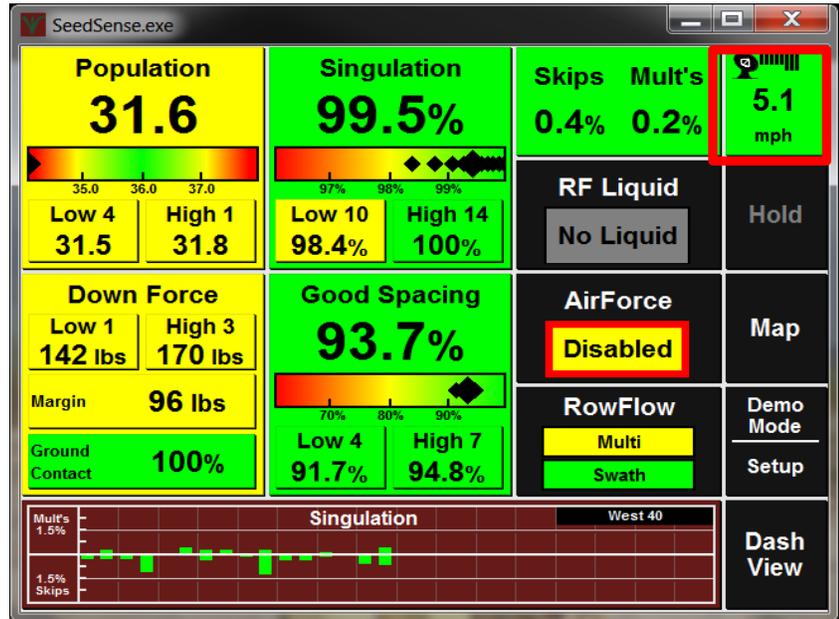
Step 8: Press NMEA Messages: The 20/20 SeedSense requires NMEA strings **GGA, VTG**, **and RMC** to be turned on.
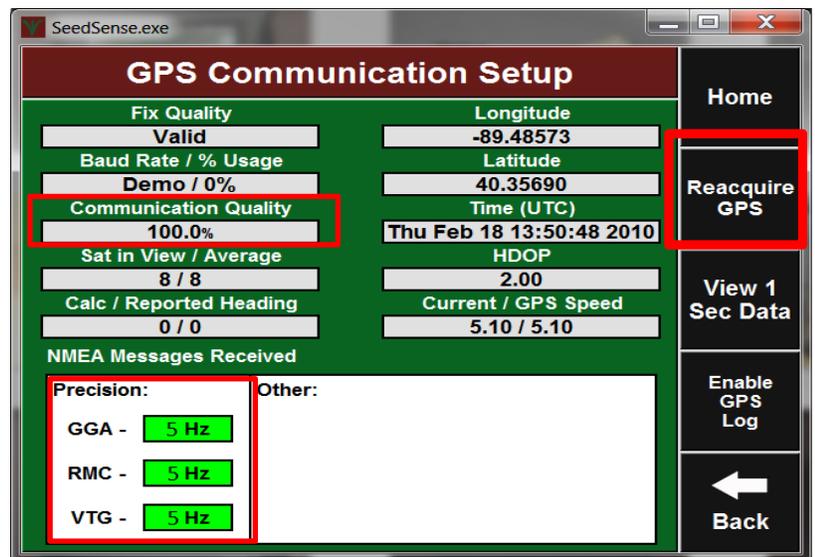
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To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button

First press REAQUIRE GPS: Then Verify Communication quality and NMEA Messages

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Setup Tips/Troubleshooting

Problem: AutoPilot controllers (NAV2) output the GPS location of the rear axle, rather than the GPS location of the antenna.

Solution: In this case, enter the "Forward" distance in the 20/20 as 0 (Setup / Systems / GPS / Tractor / Forward, C).

Models Included: *This may apply to any of the following monitors:* FMX, FM1000, FMD, Insight, CFX 750, EZ-Guide 500, EZ-Guide Plus, DJ Inteli Ag, Pro600, Pro700. Any system where the GPS signal comes from the NAV2. This does NOT include a system that is pulling the GPS directly from the Receiver on the top of the cab.

Is my model affected?

To confirm if this applies to your system, a simple test can be completed.

1. Have your tractor parked outside, with the GPS receiver system and the 20/20 powered on, and the GPS connected between them.

2. View the GPS Communication page on the 20/20 (Setup / Systems / GPS / GPS Communication).

3. Record this GPS location on a notepad.

4. Next, change the antenna to rear axle distance on your GPS receiver (Configuration / AutoPilot / Calibrate   / Roll Antenna Compensation / Antenna Distance from Fixed Axle).

5. This can be changed from 0 ft. to 20 ft.

On our initial test, changing the GPS offset changed the coordinates displayed by about 0.00004. If changing this distance on the GPS receiver changes either the latitude or longitude values on the 20/20, then your GPS is outputting the location of the rear axle. Be sure to input the original values into your GPS before leaving this test.

SeedSense®

Trimble FMX/FM 1000

- **with Assisted Steer (Non – Hydraulic)**
- **No auto steer with 12 pin Duetsch**

Installation & Configuration Guide for Harness 727060:

Summary: In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that must be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 HZ**

- GGA: Time, position and fix type data.
- RMC: Time, date, position, course and speed data.
- VTG: Course and speed information relative to the ground.
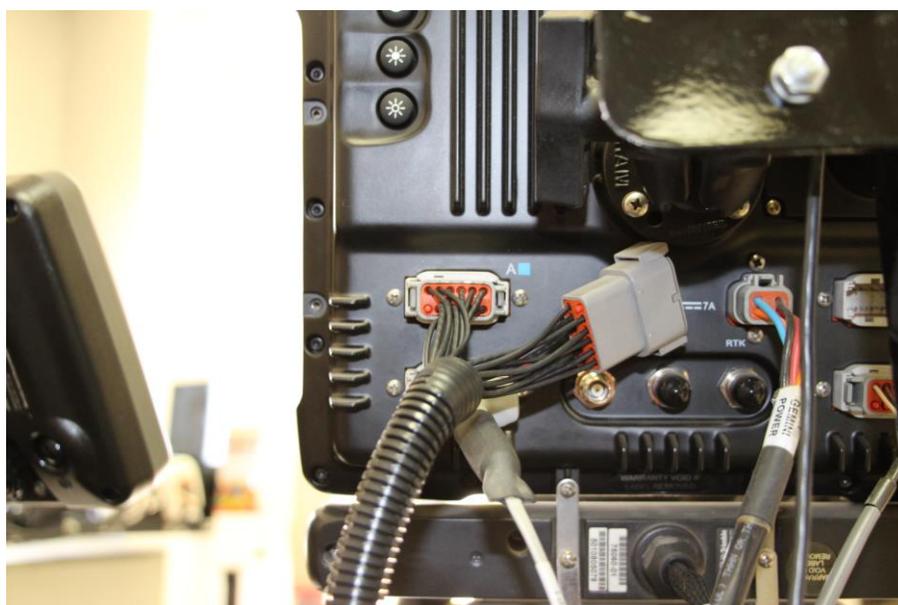
Baud Rate: 19200 or 38400

Precision Planting Harnesses Available for communication from Trimble FMX/FM1000 to 20/20 SeedSense Monitor

Precision Planting Harness: 727060

Harness Installation:

Precision Planting harness 727060 will plug into Port A (or B) as shown below:

Plug the 4 pin labeled GPS into the Precision Planting Universal Tractor Harness 725499 (Connecting to Display Unit) at the 4 pin labeled GPS.

Configuring the FMX/FM1000 display to Output NMEA

Next we will look at images giving instructions to output NMEA messages from the Trimble FMX with manual guidance (No Nav II controller)

**Step 1:** Locate the wrench located in the top right hand side of screen.

Step 2: Now that you are in the configuration screen you will see a button for GPS receiver.

NOTE: (If you have a Nav II controller, above GPS receiver you will see AutoPilot instead of manual guidance. If this is the case you will need to use harness 725599 or 727131 and use the installation guide for that specific harness.)
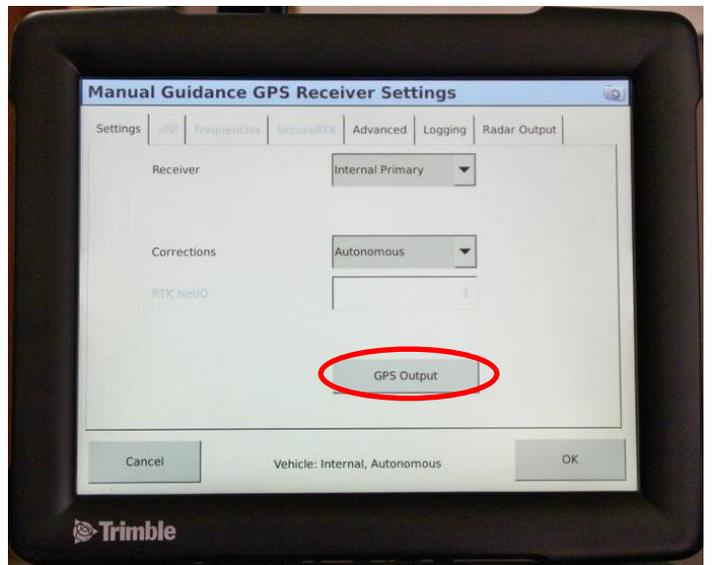
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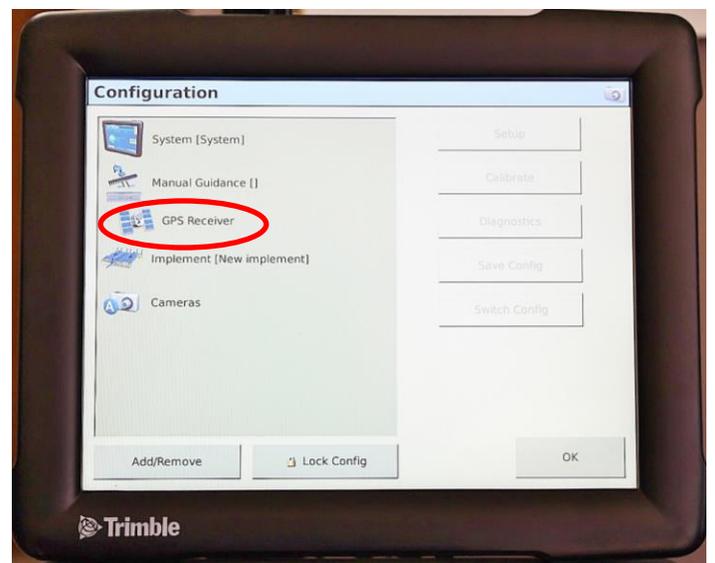
Step 3: After selecting GPS Receiver press Setup.
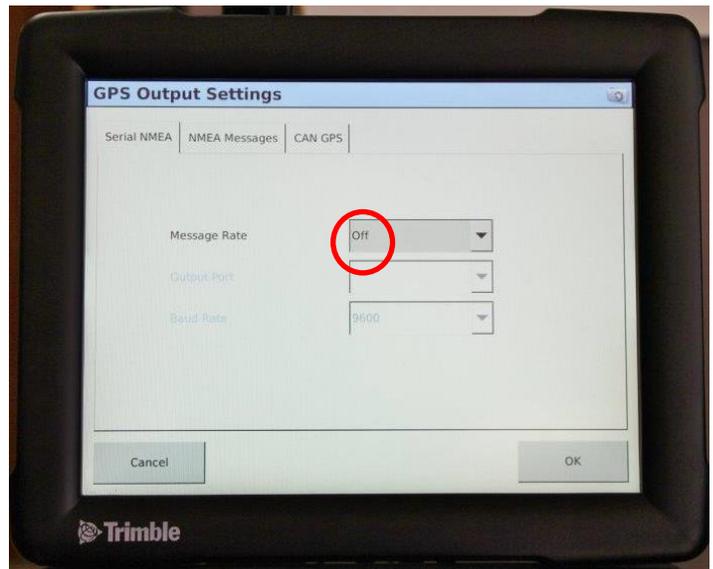
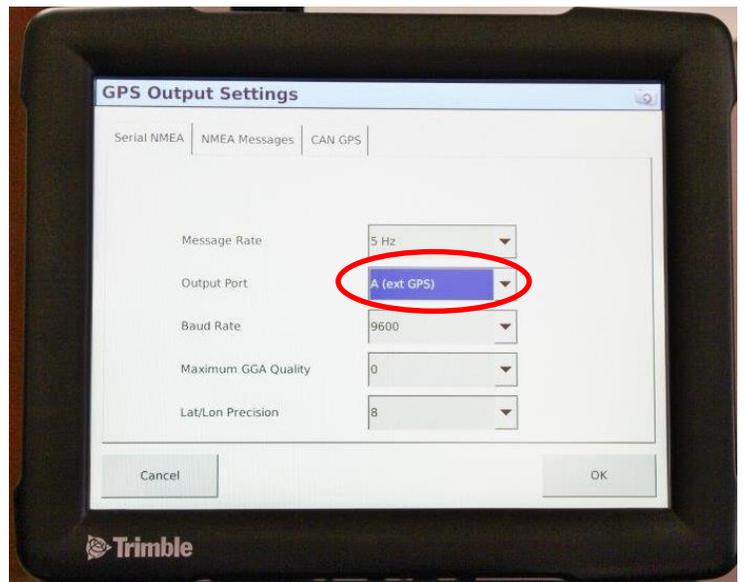**This will take you to the manual guidance GPS receiver settings.**
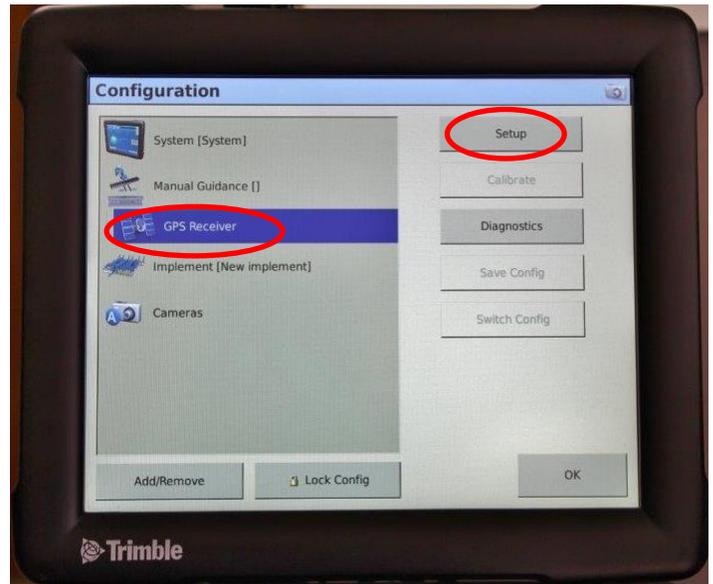
Step 4: Select GPS Output

Step 5: NMEA output will need to be setup: Press the down arrow next to Message Rate. This will be set at **5 Hz**

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Step 6: Now we will tell the Trimble FMX /FM 1000 which port to send the NMEA messages through. You will use **Port A (GPS)**

Step 7: Precision Planting requires a baud rate of 19200 or 38400. This can be selected from the down arrow shown below.

Step 8: Press NMEA Messages: The 20/20 SeedSense requires NMEA strings **GGA, VTG, and RMC** to be turned on.

5

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To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button

First press REAQUIRE GPS: Then Verify Communication quality and NMEA Messages

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SeedSense®

Trimble CFX/FM 750

- with Hydraulic Steer - Trimble Aftermarket

Installation & Configuration Guide for Harness 725599:

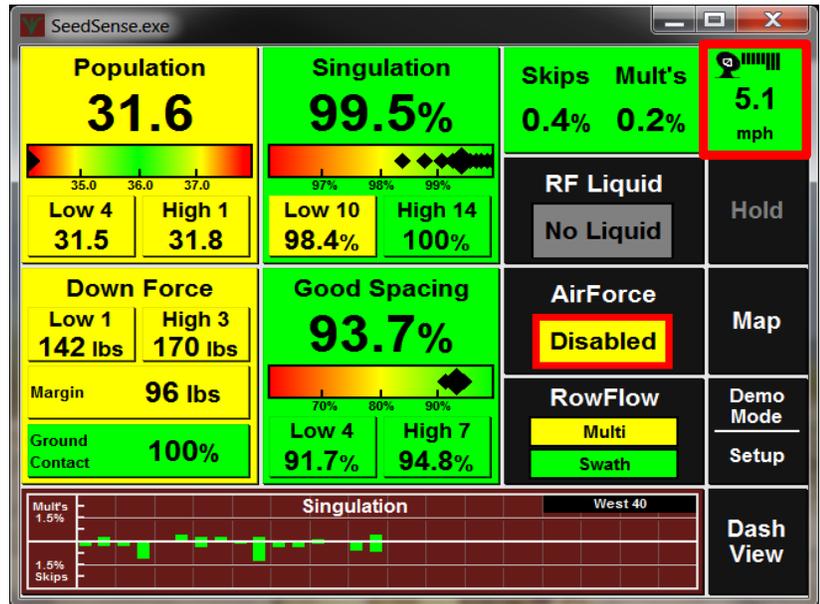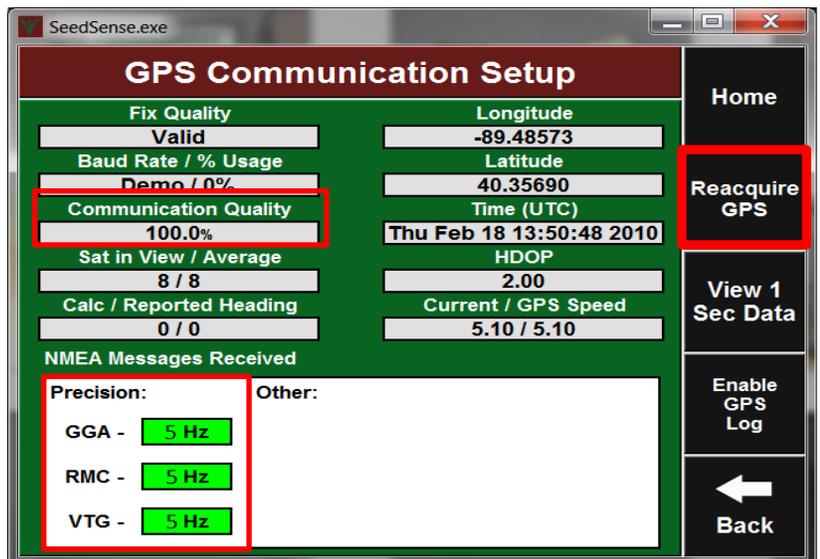**Summary:** In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that must be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 Hz**

- GGA: Time, position and fix type data.
- RMC: Time, date, position, course and speed data.
- VTG: Course and speed information relative to the ground.

Baud Rate: 19200 or 38400

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Trimble CFX/FM 750:

- ## with Hydraulic Steer - Trimble Aftermarket

Precision Planting Harness: 725599

Connecting 20/20 to Trimble CFX/FM 750 with Nav II Controller

First step is to locate your Nav II controller in your cab. This is typically located behind your operator's seat or underneath. The Nav II behind the seat will typically be in behind a removable plate under the cargo netting behind the operator's seat.

Location of the NAV can vary from behind the seat in the panel (Case Magnum) to under the cab (CAT challenger), to outside the back window (AGCO), left of the seat (Deere) and various other locations. The harnesses pictured are only installed on AFTERMARKET installations. Factory built installations of Accuguide Case vehicles have different harnesses than pictured. (May require the 725599, 727131, or a special round connexal adapter to 725599 configurations)

The 725599 Harness utilizes a 9 pin serial port (Laptop with LED Light flashing rapidly). To locate the serial port on the Nav II first find the 24 pin Deutsch connector on the Nav II (it is the small of the two plugging into the Nav II). This is where we will output NMEA messages.

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Display Configuration:

Next we will look at visual images giving step by step instructions to output NMEA messages from the Trimble CFX/FM 750:

Step 1: Locate the wrench located on the left hand side of screen.

Step 2: Now that you are in the Settings screen you will see a button labeled Vehicle.

Step 3: Press Auto Steer Setup

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Step 4: Select Advanced Setting

Continued Step 4: NMEA Output

Step 5: This screen will set the NMEA Output Parameters. Three critical settings on this screen are needed for GPS to be sent to 20/20.

1- NMEA Output (Yellow): This setting should show: Enabled
2- Baud Rate (Blue): Select 19200, 38400, or 115200
3- NMEA Messages (Red) GGA, RMC, & VTG must be set to 5HZ

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To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button

First press REAQUIRE GPS: Then Verify Communication quality and NMEA Messages

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Setup Tips/Troubleshooting

Problem: AutoPilot controllers (NAV2) output the GPS location of the rear axle, rather than the GPS location of the antenna.

Solution: In this case, enter the "Forward" distance in the 20/20 as 0 (Setup / Systems / GPS / Tractor / Forward, C).
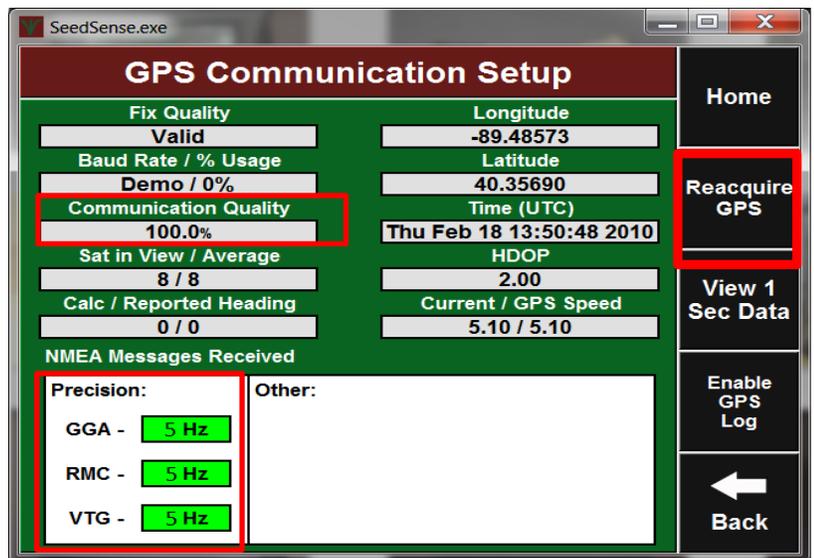
Models Included: *This may apply to any of the following monitors:* FMX, FM1000, FMD, Insight, CFX 750, EZ-Guide 500, EZ-Guide Plus, DJ Inteli Ag, Pro600, Pro700. Any system where the GPS signal comes from the NAV2. This does NOT include a system that is pulling the GPS directly from the Receiver on the top of the cab.

Is my model affected?

To confirm if this applies to your system, a simple test can be completed.

1. Have your tractor parked outside, with the GPS receiver system and the 20/20 powered on, and the GPS connected between them.

2. View the GPS Communication page on the 20/20 (Setup / Systems / GPS / GPS Communication).

3. Record this GPS location on a notepad.

4. Next, change the antenna to rear axle distance on your GPS receiver (Configuration / AutoPilot / Calibrate / Roll Antenna Compensation / Antenna Distance from Fixed Axle).

5. This can be changed from 0 ft. to 20 ft.

On our initial test, changing the GPS offset changed the coordinates displayed by about 0.00004. If changing this distance on the GPS receiver changes either the latitude or longitude values on the 20/20, then your GPS is outputting the location of the rear axle. Be sure to input the original values into your GPS before leaving this test.

SeedSense®

Trimble CFX / FM 750

- ## with Hydraulic Steer - Case IH Factory Install

Installation & Configuration Guide for Harness 727131:

Summary: In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that must be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 Hz**

- GGA: Time, position and fix type data.
- RMC: Time, date, position, course and speed data.
- VTG: Course and speed information relative to the ground.

Baud Rate: 19200 or 38400

Precision Planting Harness: 727131

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Locating the NAV II controller and installing harnessing

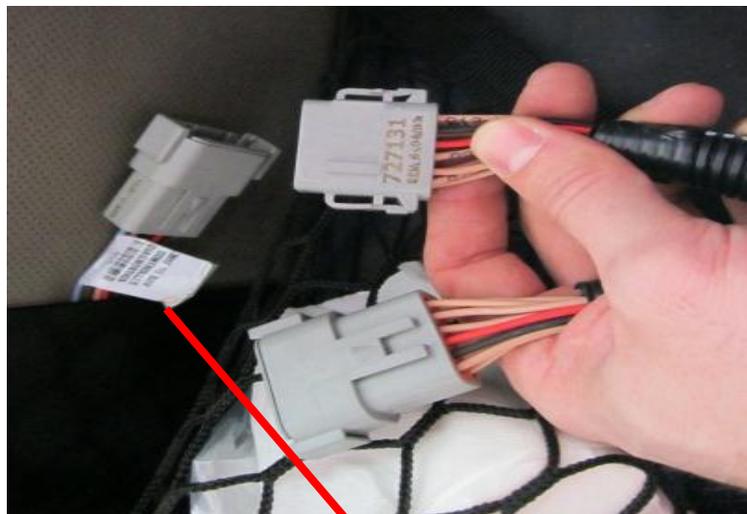**Step 1:** Locate the NAV II controller box inside the access panel behind the seat. Remove all four wing nuts. (This location is for Magnum Tractors) Other locations could be 4WD under the "buddy seat" and combines typically found under the armrest or under the cab

Step 2: Slide the NAV II box off of the threaded studs to expose the connectors on its right side. There is a 12-pin Deutsch plug labeled "Controller Diagnostics."

Step 3: Connect the 12-pin Deutsch connector on the 727131 Trimble GPS Adapter to the 12-pin Deutsch "Controller Diagnostics".

Step 4: Connect the 4-pin AMP "**GPS Port 1&1 2**" to the "**GPS**" port on the SeedSense tractor harness.

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Display Configuration:

Next we will look at visual images giving step by step instructions to output NMEA messages from the Trimble CFX/FM 750:

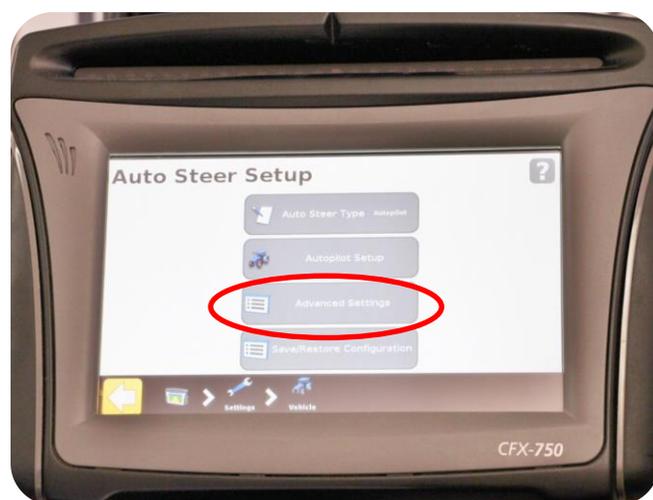**Step 1:** Locate the wrench located on the left hand side of screen.

Step 2: Now that you are in the Settings screen you will see a button labeled Vehicle.

Step 3: Press Auto Steer Setup

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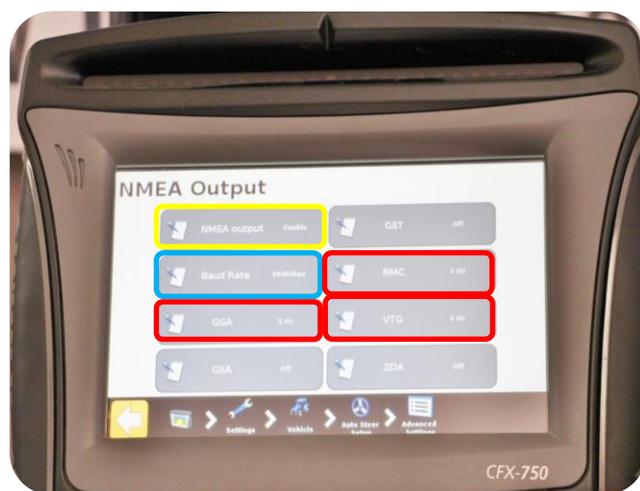**Step 4:** Select Advanced Setting

Continued Step 4: NMEA Output

Step 5: This screen will set the NMEA Output Parameters. Three critical settings on this screen are needed for GPS to be sent to 20/20.

1- NMEA Output (Yellow): This setting should show: Enabled
2- Baud Rate (Blue): Select 19200, 38400, or 115200
3- NMEA Messages (Red) GGA, RMC, & VTG must be set to 5HZ

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To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button

First press REAQUIRE GPS: Then Verify Communication quality and NMEA Messages

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Setup Tips/Troubleshooting

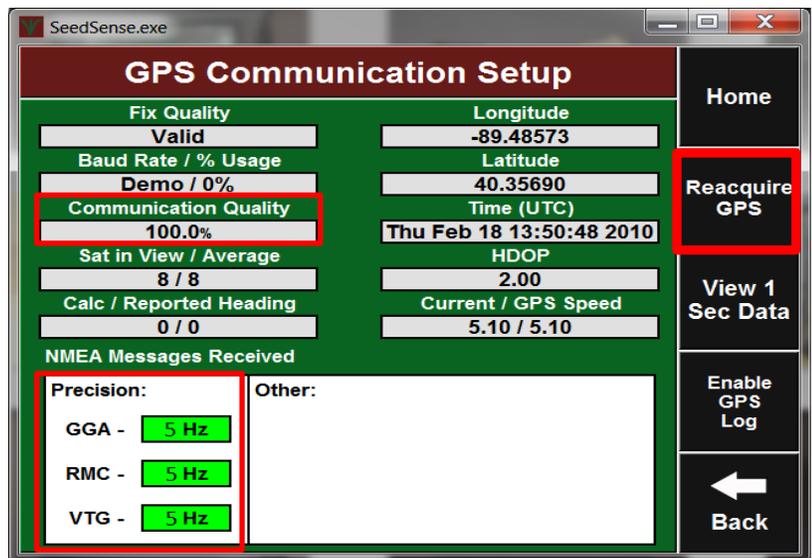**Problem:** AutoPilot controllers (NAV2) output the GPS location of the rear axle, rather than the GPS location of the antenna.

Solution: In this case, enter the "Forward" distance in the 20/20 as 0 (Setup / Systems / GPS / Tractor / Forward, C).

Models Included: *This may apply to any of the following monitors:* FMX, FM1000, FMD, Insight, CFX 750, EZ-Guide 500, EZ-Guide Plus, DJ Inteli Ag, Pro600, Pro700. Any system where the GPS signal comes from the NAV2. This does NOT include a system that is pulling the GPS directly from the Receiver on the top of the cab.

Is my model affected?

To confirm if this applies to your system, a simple test can be completed.

1. Have your tractor parked outside, with the GPS receiver system and the 20/20 powered on, and the GPS connected between them.

2. View the GPS Communication page on the 20/20 (Setup / Systems / GPS / GPS Communication).

3. Record this GPS location on a notepad.

4. Next, change the antenna to rear axle distance on your GPS receiver (Configuration / AutoPilot / Calibrate   / Roll Antenna Compensation / Antenna Distance from Fixed Axle).

5. This can be changed from 0 ft. to 20 ft.

On our initial test, changing the GPS offset changed the coordinates displayed by about 0.00004. If changing this distance on the GPS receiver changes either the latitude or longitude values on the 20/20, then your GPS is outputting the location of the rear axle. Be sure to input the original values into your GPS before leaving this test.

SeedSense®

Trimble CFX/FM 750

- **with**

Installation & Configuration Guide for Harness 725599:

Summary: In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that must be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 Hz**

- GGA: Time, position and fix type data.
- RMC: Time, date, position, course and speed data.
- VTG: Course and speed information relative to the ground.

Baud Rate: 19200 or 38400

Precision Planting Harnesses Available for communication from Trimble FMX to 20/20 SeedSense Monitor

<div align="center">

Precision Planting Harness: 727060

</div>

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Configuring the CFX-750 display to Output NMEA

Next we will look at images giving instructions to output NMEA messages from the Trimble CFX-750 with EZ Steer (No Nav II controller)
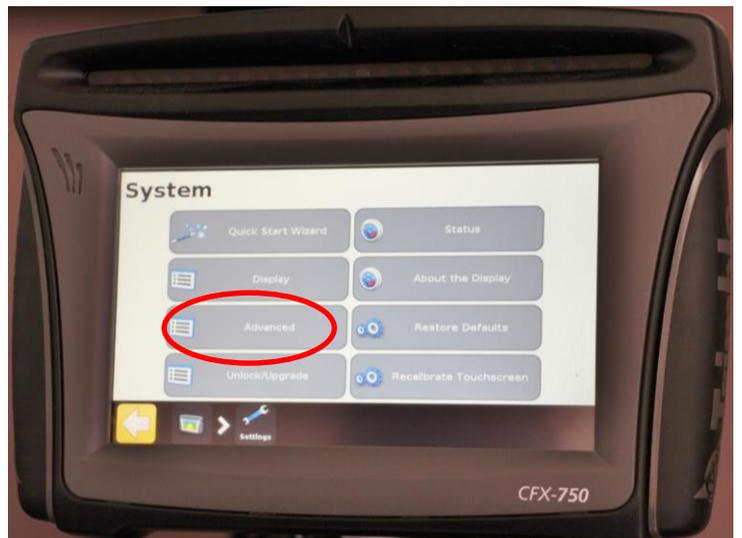

Step 1: Locate the wrench located on the left hand side of screen.

Step 2: Now that you are in the Settings screen you will see a button labeled System.

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Step 3: During this step we will change the user configuration to Advanced. The CFX-750 will not allow the user to output NMEA messages without Advanced User enabled.

Step 4: This screen allows the user to Enable Advanced User Configuration. **Turn on** Enabled Advanced User Configuration
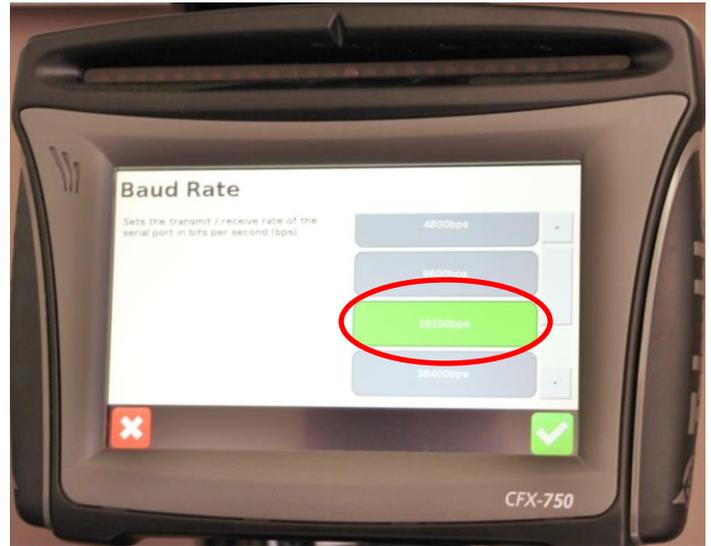

3

Step 5: Press NMEA output to configure NMEA Messages.

Step 6: Now we will tell the Trimble CFX which port to send the NMEA messages through. Available options for external Ports are A & B, select port A.

Step 7: Precision Planting requires a baud rate of 19200 or 38400. This can be selected from the down arrow shown below.

Step 8: Data Parity will be set to NONE Verify the Port Parameters are correctly set and press the green Check box.


Step 9: Select NMEA Messages

-GGA, VTG, & RMC = 5Hz

After these messages are selected you will next go to a screen that prompts decimal places. Continue past this screen by pressing Green Check box. Then press the Yellow Arrow in the lower left corner to get back to the home screen.
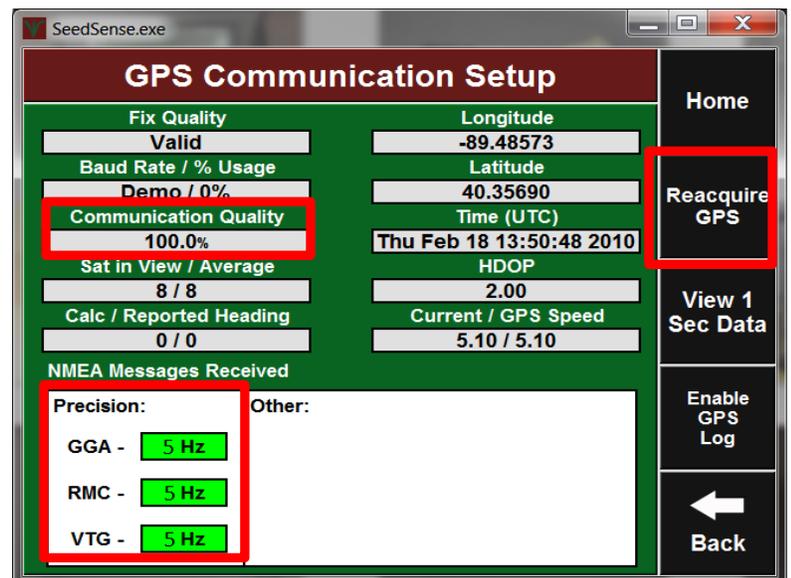
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To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button

Press REACQUIRE GPS:

Then Verify Communication Quality and NMEA Messages

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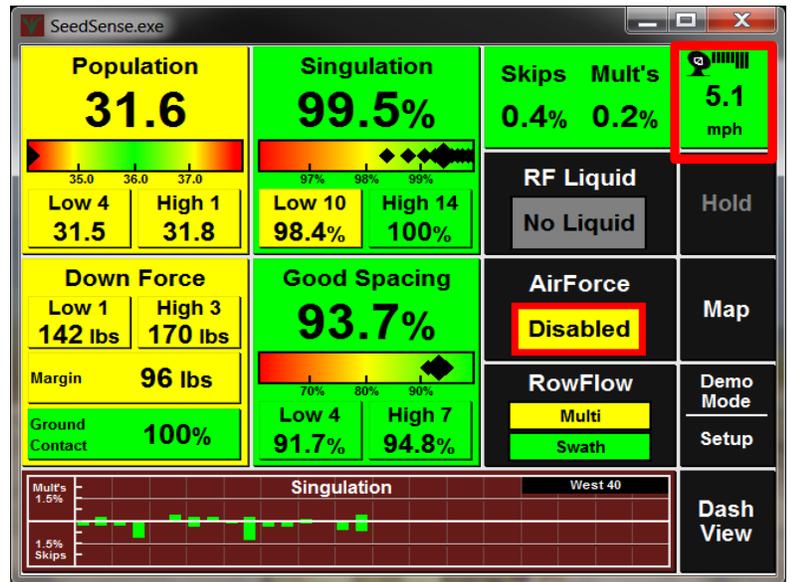
SeedSense®

EZ Guide-250 & 500

Summary: In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that must be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 HTZ**

- GGA
- RMC
- VTG

Baud Rate: 19200 or 38400

725599 Precision Planting Harness is available for communication from EZ Guide 250/500 to 20/20 SeedSense Monitor. If connecting to the EZ Guide 250, harness 64045 from Trimble in needed.

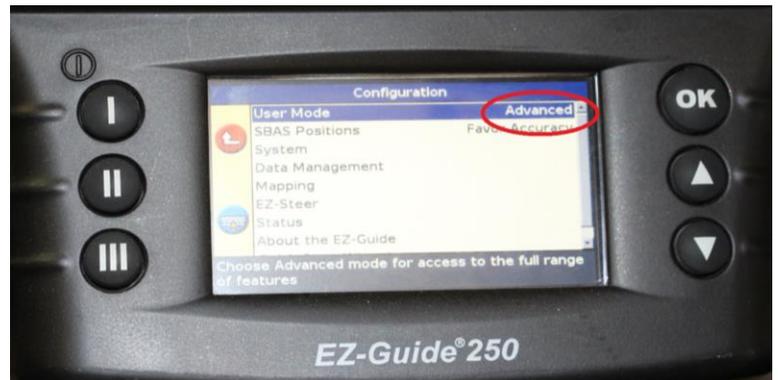## Precision Planting Harness: 725599

955447 3/15

Next we will look at visual images giving instructions to output NMEA messages:

Step 1: Select the Wrench button located on the home screen. This will take you to the Configuration page.
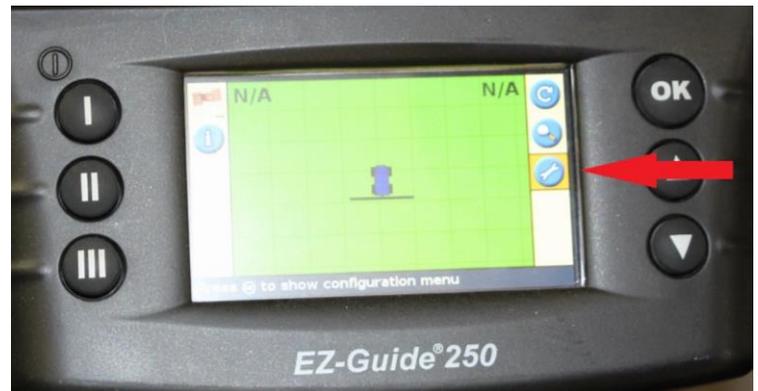
Step 2: Select user mode and change it to Advanced.   Being in Easy will not allow you to configure NMEA output.

Step 3: Now you will select the System button.

955447 3/15
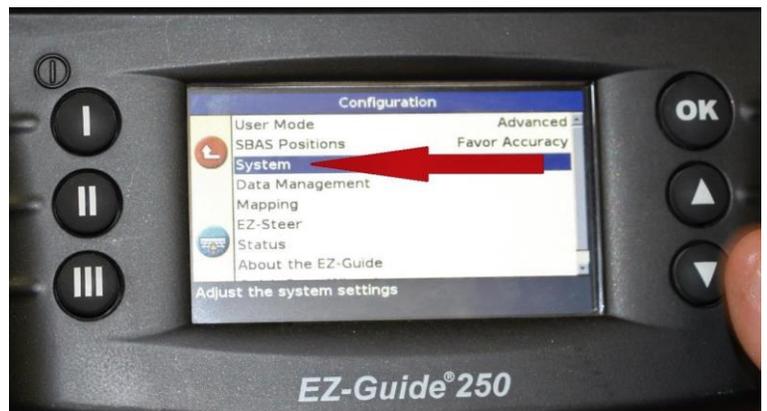
Step 4: Select GPS

Step 5: NMEA Output
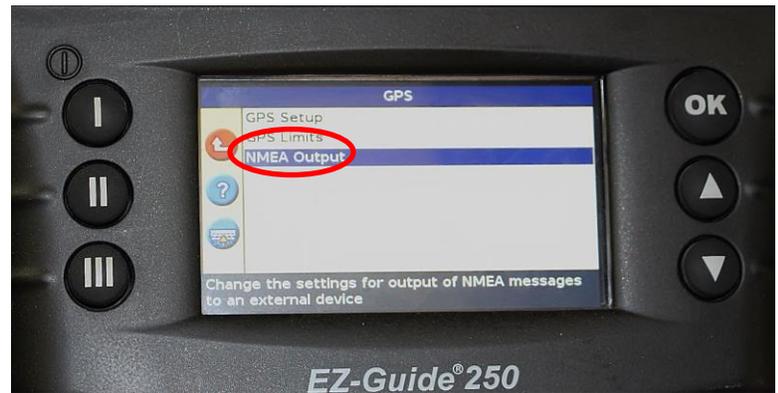
Step 6: Select the following,

Baud Rate - 38400

Data Parity - None

press Continue

3
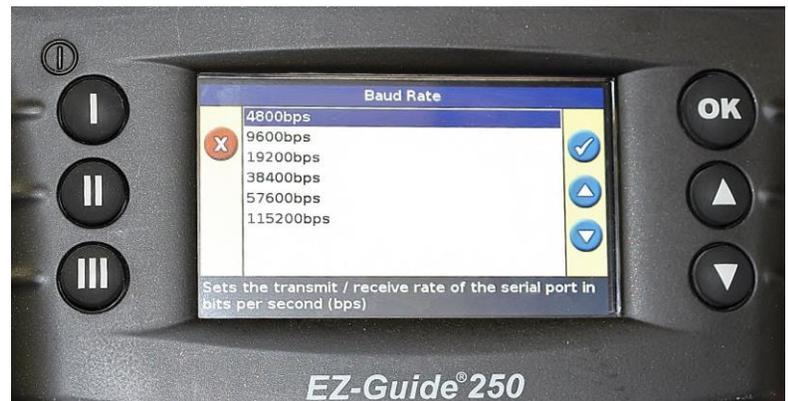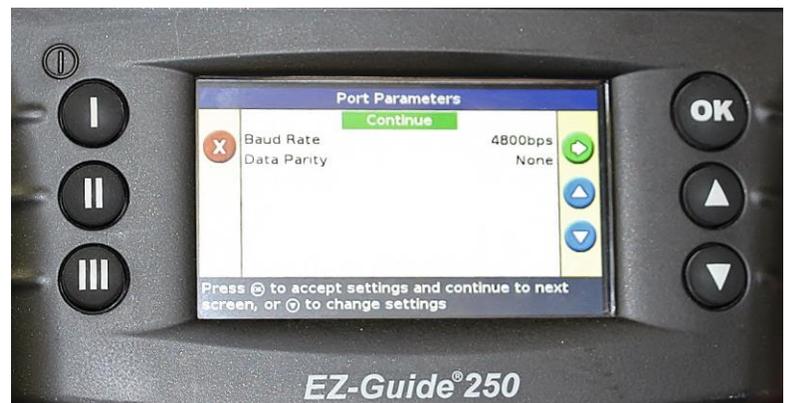
Step 7- Select

GGA - 5 Hz

VTG - 5 Hz

RMC - 5 Hz

press Continue

Step 8 – Select 8 decimal places. Press check mark to complete setup.

To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button

Press REACQUIRE GPS:

Then Verify Communication Quality

and NMEA Messages

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SeedSense®

John Deere

- **All GS2 & GS3 Display & StarFire Receivers**

Installation & Configuration Guide for Harness 727124:

Summary: In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that m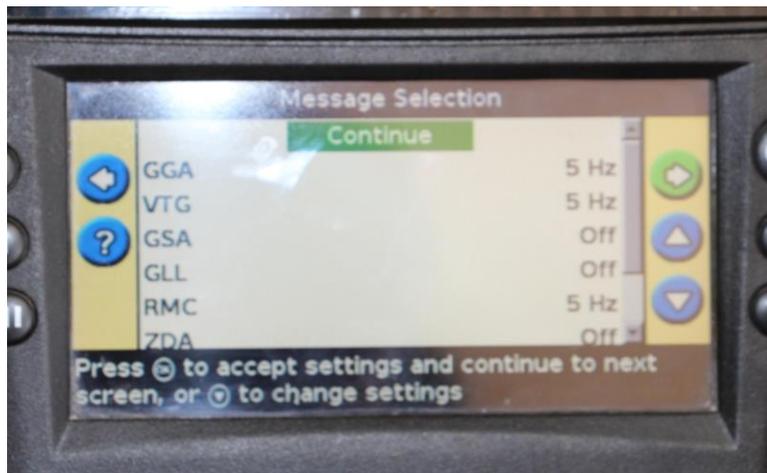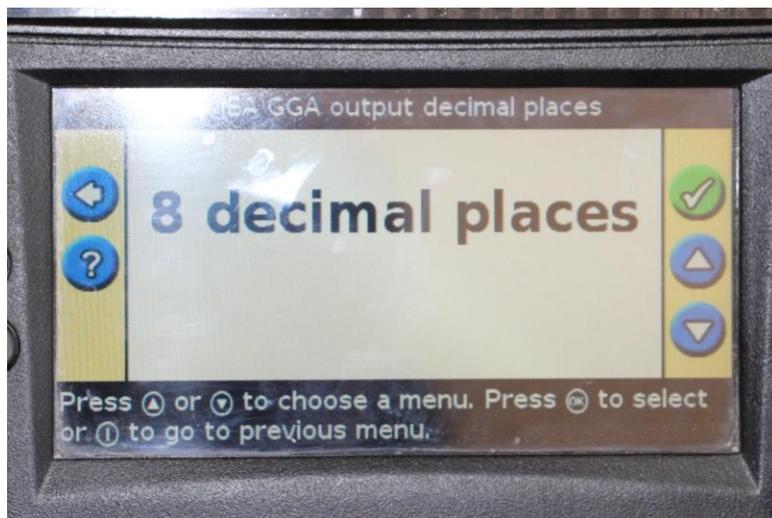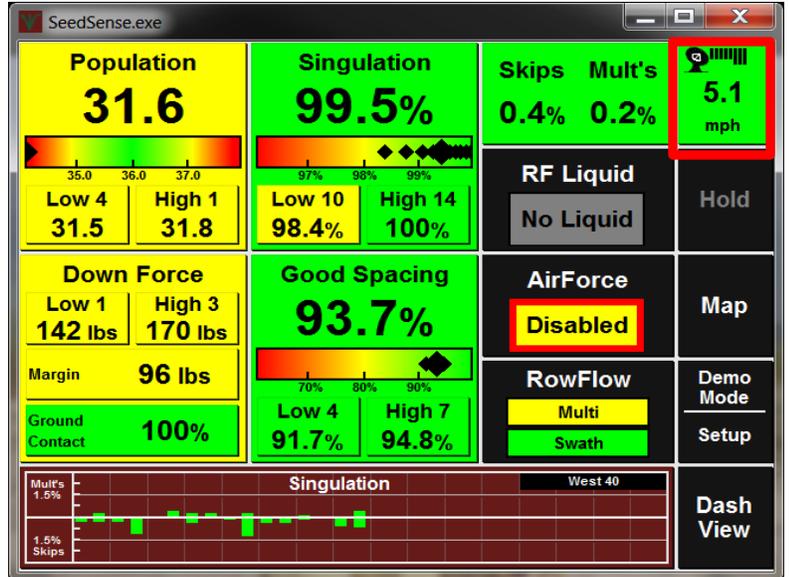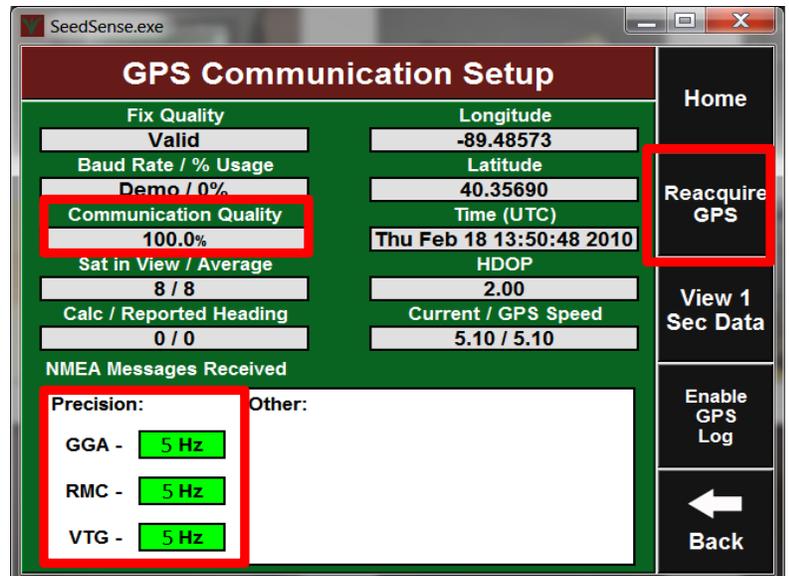ust be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 Hz**

- GGA: Time, position and fix type data.
- RMC: Time, date, position, course and speed data.
- VTG: Course and speed information relative to the ground.

Baud Rate: 19200 or 38400

Connecting 20/20 to StarFire

Connect the 727124 harness to the Starfire receiver outside the cab. If John Deere is powering the Starfire do not connect the 2 pin Weather Pack connection next to the 4 pin GPS connection. If John Deere is not powering the receiver then connect the 2 pin Weather Pack to aux power on the Cab Control Module or order 700242 Aux power harness.

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Display Configuration:

Next we will look at visual images giving step by step instructions to output NMEA messages from the John Deere GreenStar:

Step 1: Locate the menu button (A) in the lower right hand corner of the GreenStar Display. Then select StarFire receiver from the menu.

(A)
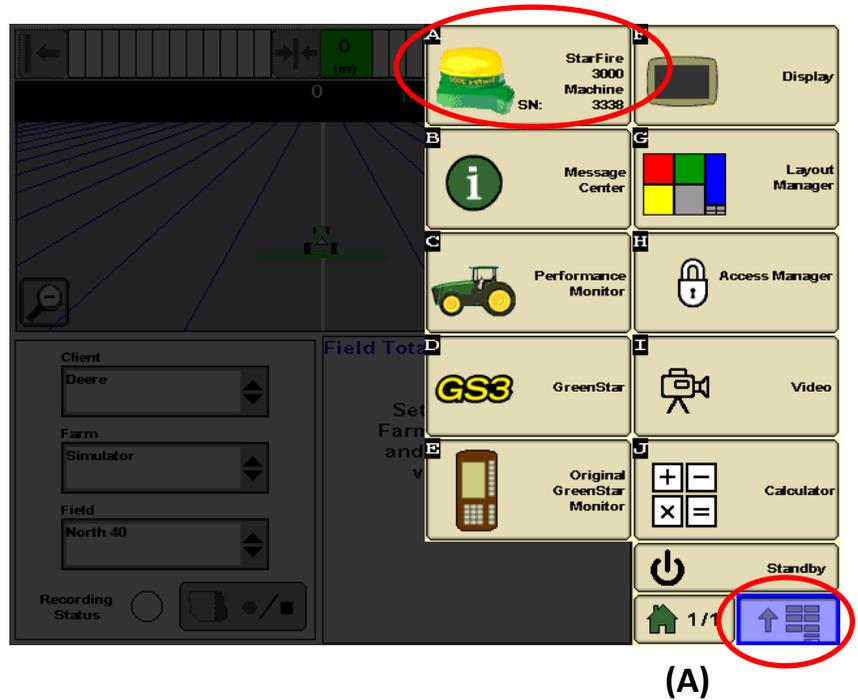
Step 2: Select the Serial Port tab.
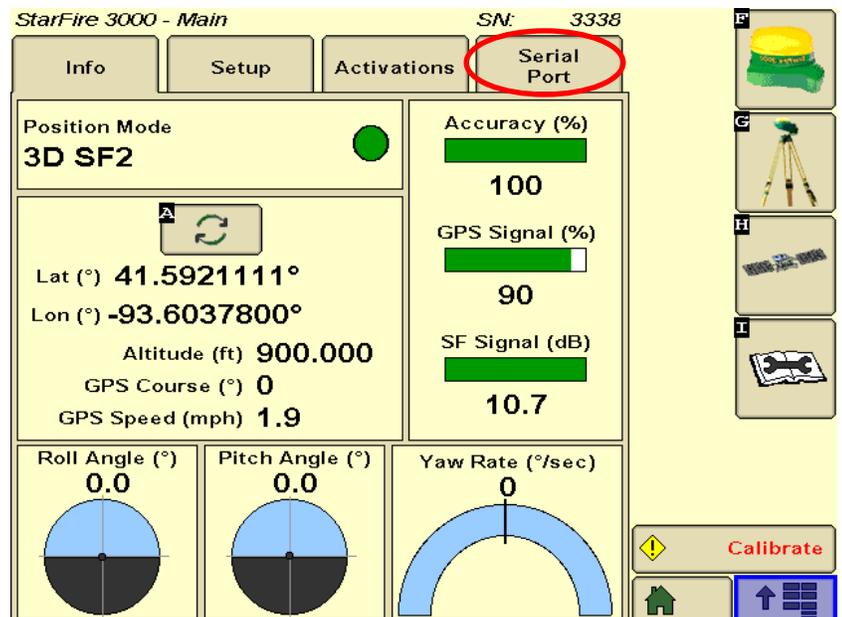
Step 3: Change Setup:

 Baud Rate to **38400**,

 Output rate to **5 Hz**

 Select Messages **GGA RMC VTG**.
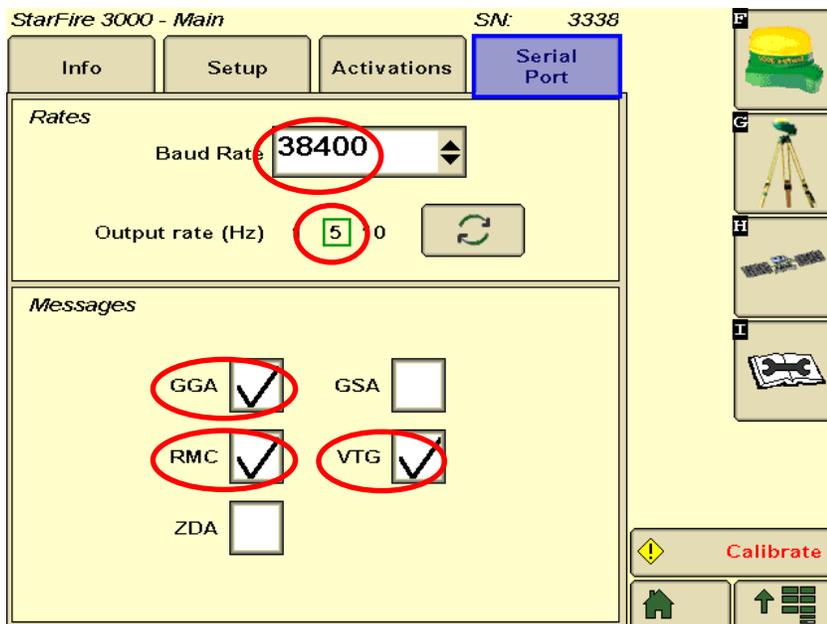
To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button

First press REAQUIRE GPS: Then Verify
Communication quality and NMEA
Messages

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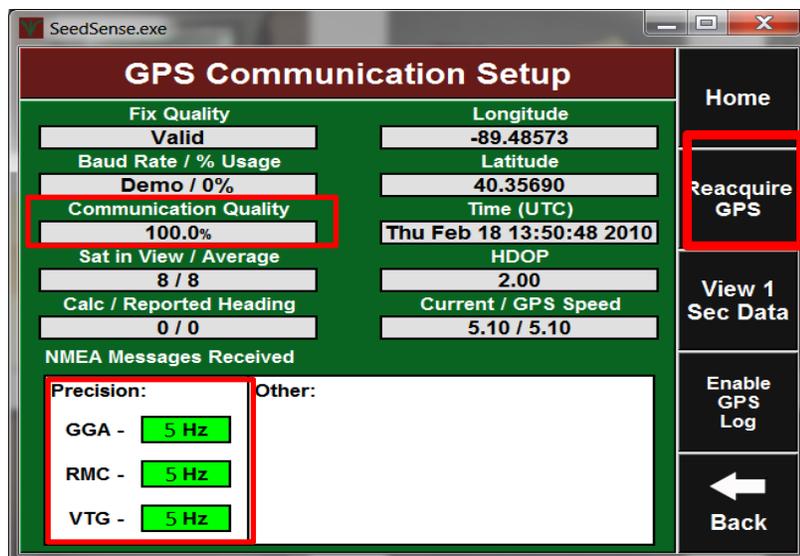
SeedSense®

Case IH Pro 700 (Pro 600 v.26 or higher)

- with Hydraulic Steer - Case IH Factory Install

Installation & Configuration Guide for Harness 727131:

Summary: In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that must be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 Hz**

- GGA: Time, position and fix type data.
- RMC: Time, date, position, course and speed data.
- VTG: Course and speed information relative to the ground.

Baud Rate: 19200 or 38400

Precision Planting Harness: 727131

Locating the NAV II controller and installing harnessing

Step 1: Locate the NAV II controller box inside the access panel behind the seat. Remove all four wing nuts. (This location is for Magnum Tractors) Other locations could be 4WD under the "buddy seat" and combines typically found under the armrest or under the cab

Step 2: Slide the NAV II box off of the threaded studs to expose the connectors on its right side. There is a 12-pin Deutsch plug labeled "Controller Diagnostics."

2

Step 3: Connect the 12-pin Deutsch connector on the 727131 Trimble GPS Adapter to the 12-pin Deutsch "Controller Diagnostics".

Step 4: Connect the 4-pin AMP "**GPS Port 1&1 2**" to the "**GPS**" port on the SeedSense tractor harness.

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Display Configuration:

Next we will look at visual images giving step by step instructions to output NMEA messages from the Case Pro 600/700:

Step 1: On the Run screen on the Pro 700, navigate to the menu by touching "Back".
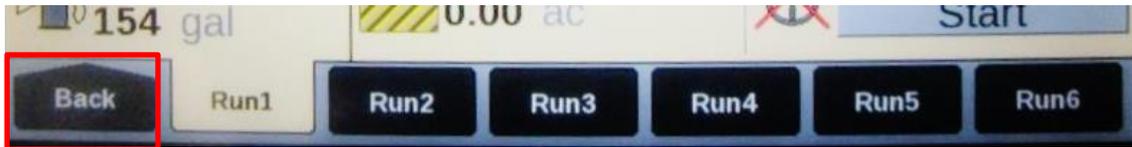
Step 2: Touch the "Toolbox" button.
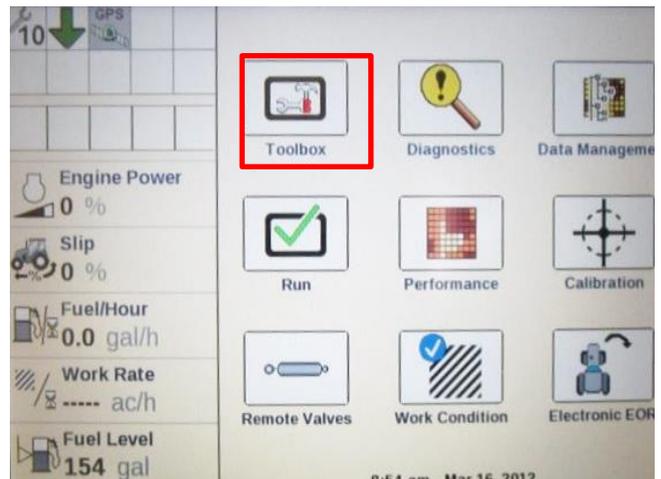
Step 3: Navigate to the NAV tab across the bottom. Arrow over if needed. You will use the NMEA Output Setup and NMEA Message Setup buttons for configuration.

955452 3/15
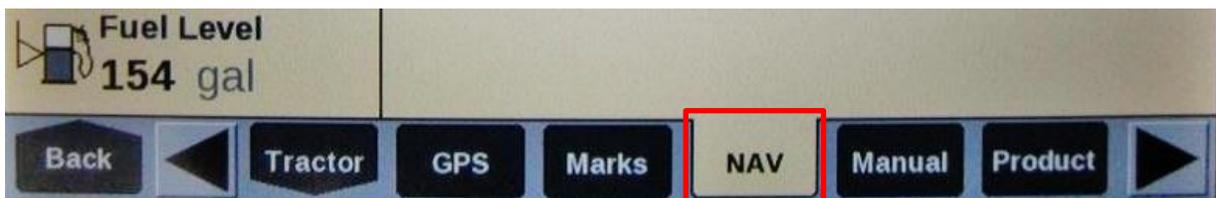
Step 4: Press Edit to configuration the NMEA Output Setup. Touch the arrow down to select the following:

NMEA Output- On

Baud Rate
- 19,200
- 38,400

Absolute Speed = Off

LLA Precision = 8

Max. Quality = 8

Click "OK" when finished.
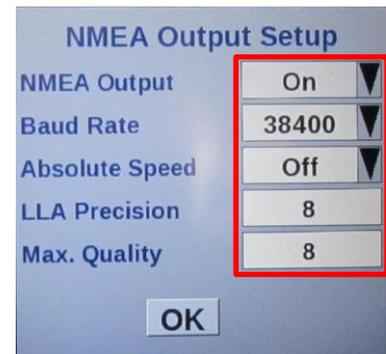
Step 5: Continue configuration with the NMEA Message Setup and press Edit.
Select the following output intervals:

GGA-200 *ms*
RMC-200 *ms*
VTG-200 *ms*

Note: The Pro 600/700 requires millisecond (*ms*) values as opposed to hertz (Hz) values.

Click "OK" when finished.
The NAV II controller should now be configured to output GPS to the 20/20 system.
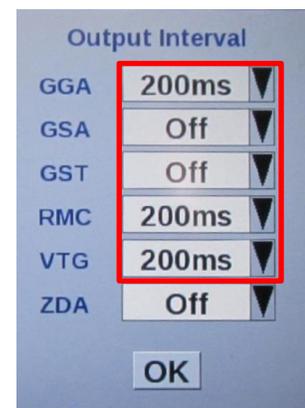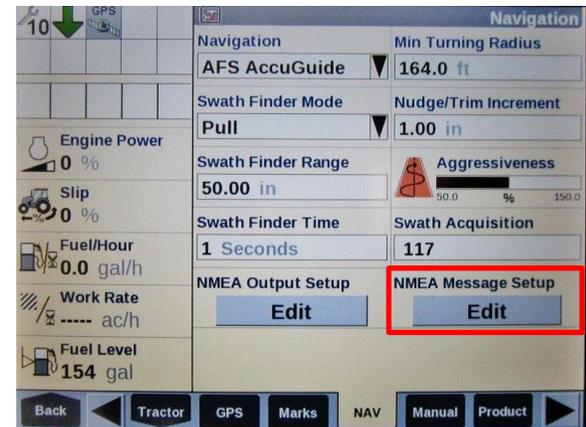
5

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To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button
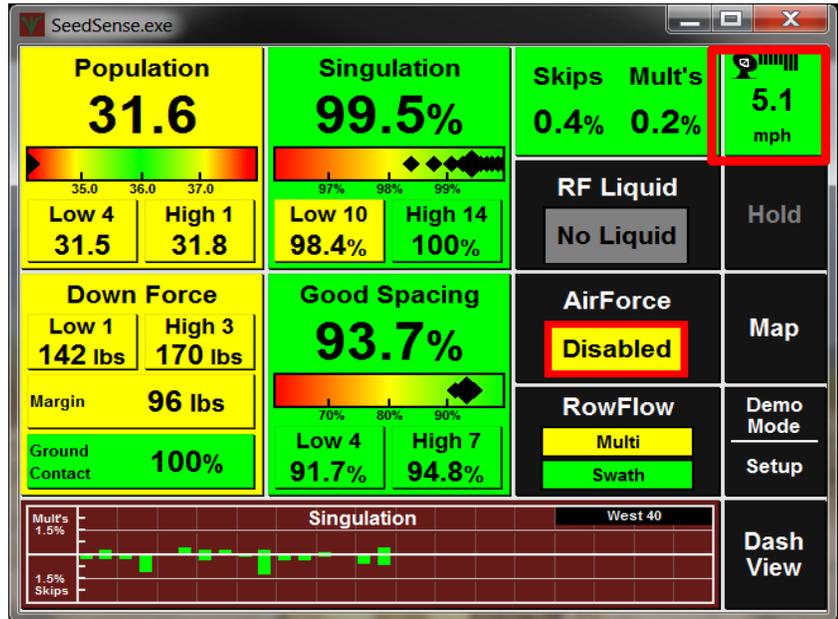
First press REAQUIRE GPS: Then Verify Communication quality and NMEA Messages
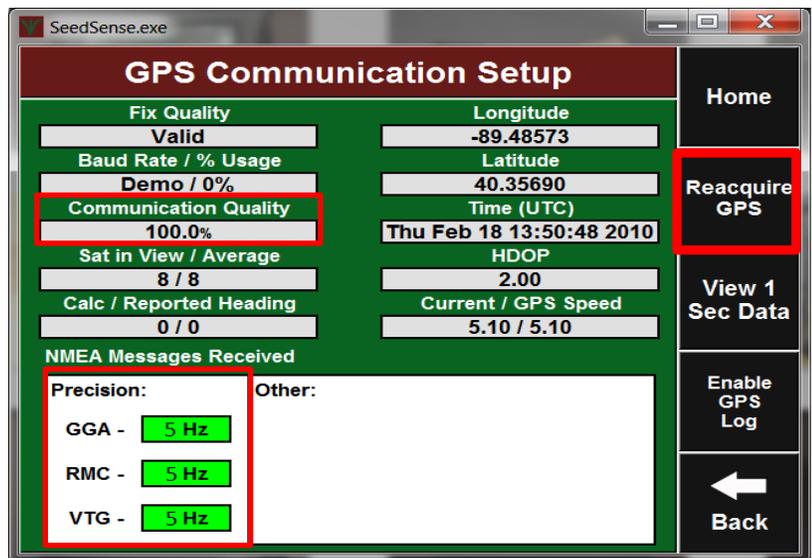
Troubleshooting GPS Measurements

Using an AutoPilot Controller with 20/20 SeedSense

Problem: AutoPilot controllers (NAV2) output the GPS location of the rear axle, rather than the GPS location of the antenna.

Solution: In this case, enter the "Forward" distance in the 20/20 as 0 (Setup / Systems / GPS / Tractor / Forward, C)

Models Included: *This may apply to any of the following monitors:* FMX, FM1000, FMD, Insight, CFX 750, EZ-Guide 500, EZ-Guide Plus, DJ Inteli Ag, Pro600, Pro700. Any system where the GPS signal comes from the NAV2. This does NOT include a system that is pulling the GPS directly from the Receiver on the top of the cab.

Is my model affected?
To confirm if this applies to your system, a simple test can be completed.

1. Have your tractor parked outside, with the GPS receiver system and the 20/20 powered on, and the GPS connected between them.
2. View the GPS Communication page on the 20/20 (Setup / Systems / GPS / GPS Communication).
3. Record this GPS location on a notepad.
4. Next, change the antenna to rear axle distance on your GPS receiver (Configuration / AutoPilot / Calibrate / Roll Antenna Compensation / Antenna Distance from Fixed Axle).
5. This can be changed from 0 ft. to 20 ft.

   On our initial test, changing the GPS offset changed the coordinates displayed by about 0.00004. If changing this distance on the GPS receiver changes either the latitude or longitude values on the 20/20, then your GPS is outputting the location of the rear axle. Be sure to input the original values into your GPS before leaving this test.

SeedSense®

Case IH Pro 600 / 700 (New Holland IntelliView IV)

- with Trimble receiver (372, 262, 252, 162)

Installation & Configuration Guide for Harness 727131:

Summary: In order for 20/20 SeedSense Monitor to receive NMEA strings from a third party GPS receiver, there are a few simple steps that must be completed before signal will be transferred. Below are step by step instructions detailing configurations and requirements for communicating with our 20/20 SeedSense Monitor. Here are a few basic requirements for the 20/20 SeedSense Monitor.

NMEA Strings: Set at **5 Hz**

- GGA: Time, position and fix type data.
- RMC: Time, date, position, course and speed data.
- VTG: Course and speed information relative to the ground.

Baud Rate: 19200 or 38400

Precision Planting Harness: 727131

Configuring a Trimble 372, 262, 252, & 162 through a Pro 600 / 700 or New Holland IntelliView IV

Step 1: Connect the 727131 to an open Port A or B. If both ports are being used, unplug the harness in Port B and plug the 727131 into Port B. Then plug the harness that was in Port B into the open port on the 727131.

Only plug the 2 pin weather pack on the 727131 harness into power if the receiver is not being powered by the OEM display.

EXCEPTION: When using a Trimble 162 Receiver configure Port A.

955453 3/15

Next we will look at visual images giving step by step instructions to output NMEA messages from the Display:

Step 1: Click the Diagnostic button.

Step 2: Click the RDI button to access the GPS configuration tool. If the botton does not show up click the right arrow to access the RDI button.

Step 3: Use the arrows in the middle of the screen to navigate through screens, the ESC to step back one level, and the Enter to accept changes.

Press the down arrow once.

Step 4: Press the right arrow until you see the Configuration screen. Then press the down arrow to enter.

Step 5: Push the right arrow until you see the Port A or B or C Config Screen. Then press the down arrow to select which port you have the 727131 harness plugged into. If you have the 727131 plugged into Port B and the harness that was in Port B into the open port on the 727131 use Port C Config.

Step 6: Click the right arrow to get an active cursor, use right/left arrows to move the cursor to different settings. Move the cursor to the second line next to 8N1 O TSIP and select TSIP. Use the up and down arrows to select NMEA then select baud rate at 38K.4 or 19K.2. Once selected, press the enter button.

The correct setting

4

Step 7: Click the down arrow to get to the NMEA1 message selection screen (Same process as above to navigate the active cursor to the desired item and change it).

Upper case messages are active, lower case messages are inactive.

Make **GGA** active and press Enter.

Step 8: Click the down arrow to get to the NMEA2 message selection screen (Same process as previous step).

Make **RMC** and **VTG** active by changing the text to upper case. Click Enter to accept.

Step 9: Press the right arrow to get the active cursor on the NMEA out timing.

It defaults to 1s (1Hz), with the active cursor on the S, press the down arrow until it changes to ASAP. If it does not change press the right arrow once more and then the down arrow.

Press Enter to accept changes. ASAP allows 5Hz output.
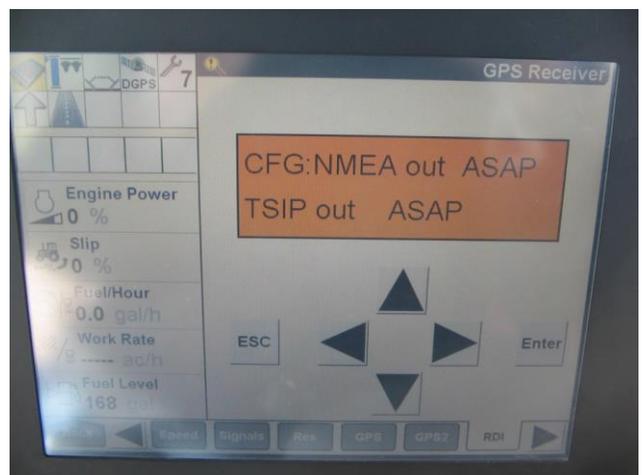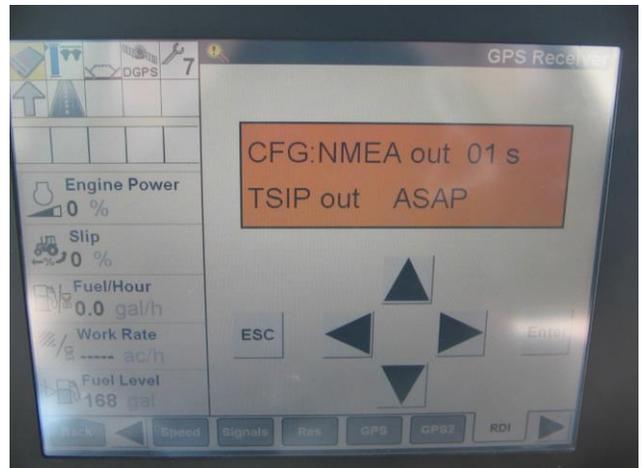
Step 10: Press the ESC button then the back button.

Step 11: Press the Run button to return to the main operating screen.
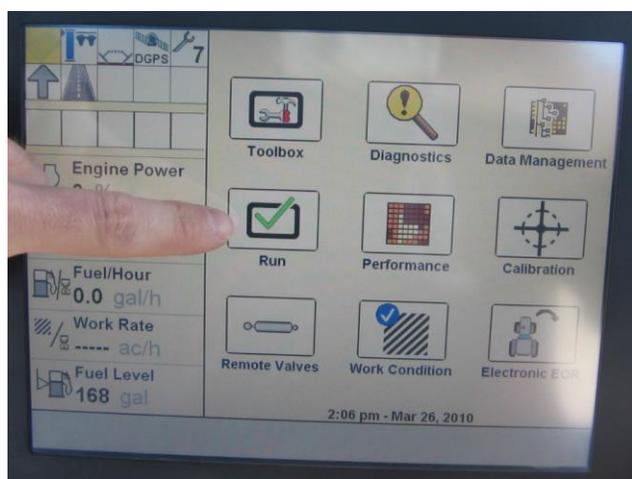
In certain instances we have found that the final step to NMEA output needs to be the baud rate change. So in this case you would alter the other settings, but skip the baud rate portion. At the end go back and input the baud rate to 38.4 or 19.2 hit Enter then Exit.

6

To verify GPS communications we will need to go to the 20/20 SeedSense Display Unit.

From the home screen press the SPEED/GPS button
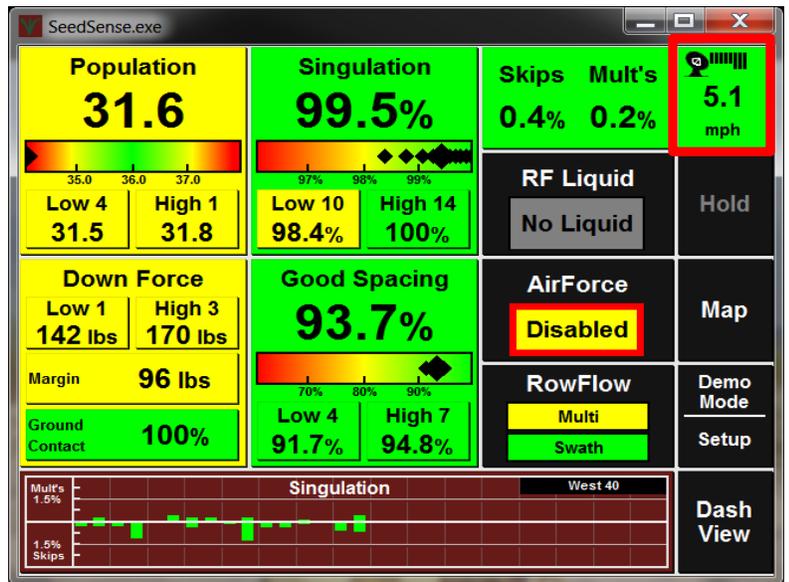
Press REACQUIRE GPS:

Then Verify Communication Quality

and NMEA Messages
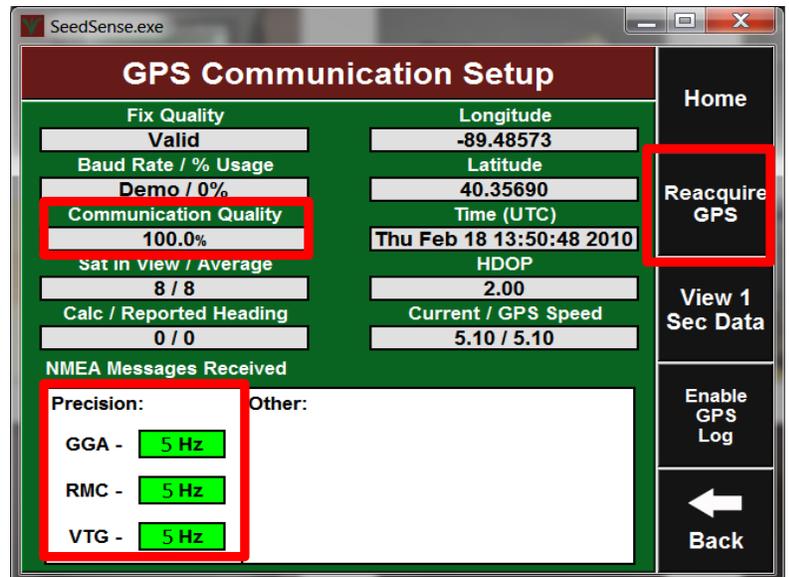
4 Pin AMP Plug

PIN NO.	FUNCTION	TO
1	Black	Ground
2	Green	RX Signal
3	White	TX Signal
4	Red	Load (+)5 Volt
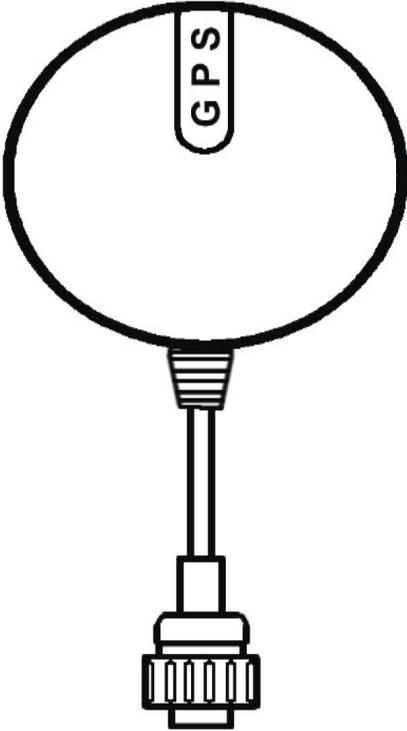
**725599
Universal GPS
Adapter**

A - DB9 Female

PIN NO.	FUNCTION	TO
1	Not Used	
2	RX	B2, C3
3	TX	B3, C2
4	DTR	B4
5	Ground	B5, C1
6	DSR	B6

B - DB9 Male

PIN NO.	FUNCTION	TO
1	Not Used	
2	TX (Null Modem)	D2
3	RX (Null Modem)	D3
4	DTR	A4
5	Ground	D1
6	DSR	A6

C - 4 Pin AMP Plug

PIN NO.	FUNCTION	TO
1	Ground	A5
2	TX	A3
3	RX	A2
4	Not Used	

D - 4 Pin AMP Plug

PIN NO.	FUNCTION	TO
1	Ground	B5
2	TX	B2
3	RX	B3
4	Not Used	

D   B

A   C
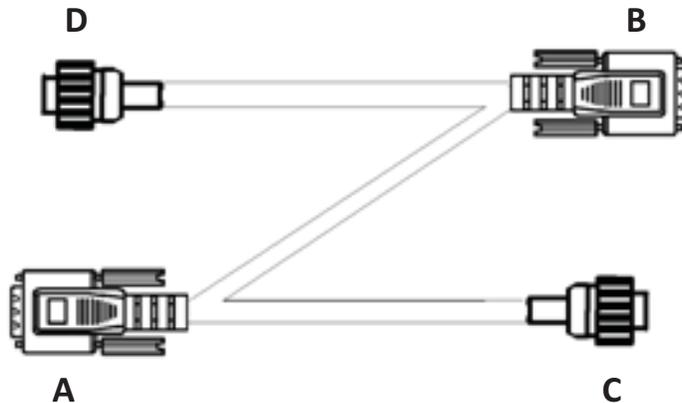
A - 12 Pin Deutsch Plug

PIN NO.	FUNCTION	TO
1	Not Used	
2	TX B	D2
3	RX B	D3
4	Not Used	
5	Signal Ground	B1, D5
6	TX A	B2
7	Not Used	
8	RX A	B3
9	Power +12V	CA
10	Power Ground	CB
11	Speed Out	
12	Signal Ground	B1, D5

B - 4 Pin AMP PLug

PIN NO.	FUNCTION	TO
1	Signal Ground	A5, D5
2	TX A	A6
3	RX A	A8
4	Not Used	

C - 2 Pin WeatherPack Receptacle

PIN NO.	FUNCTION	TO
A	Power +12V	A10
B	Power Ground	A11
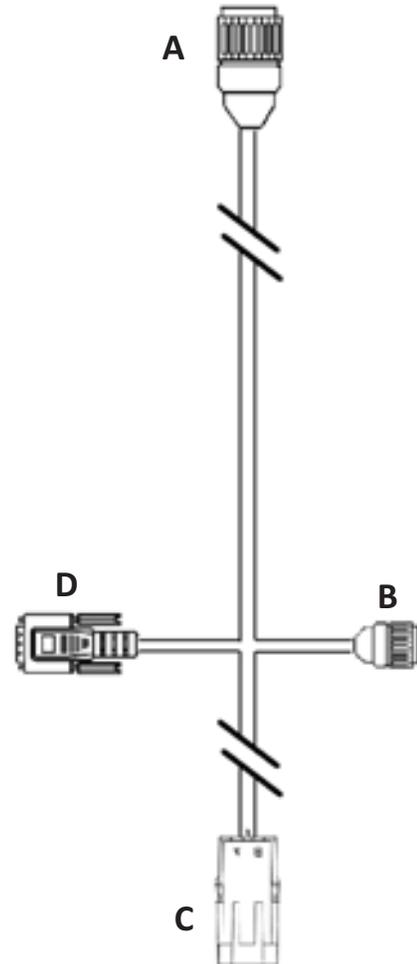
D - DB9 Serial Female

PIN NO.	FUNCTION	TO
1	Not Used	
2	TX B	A2
3	RX B	A3
4	Not Used	
5	Signal Ground	A5, B1
6-9	Not Used	

955257 3-26-12

A   **B**

C
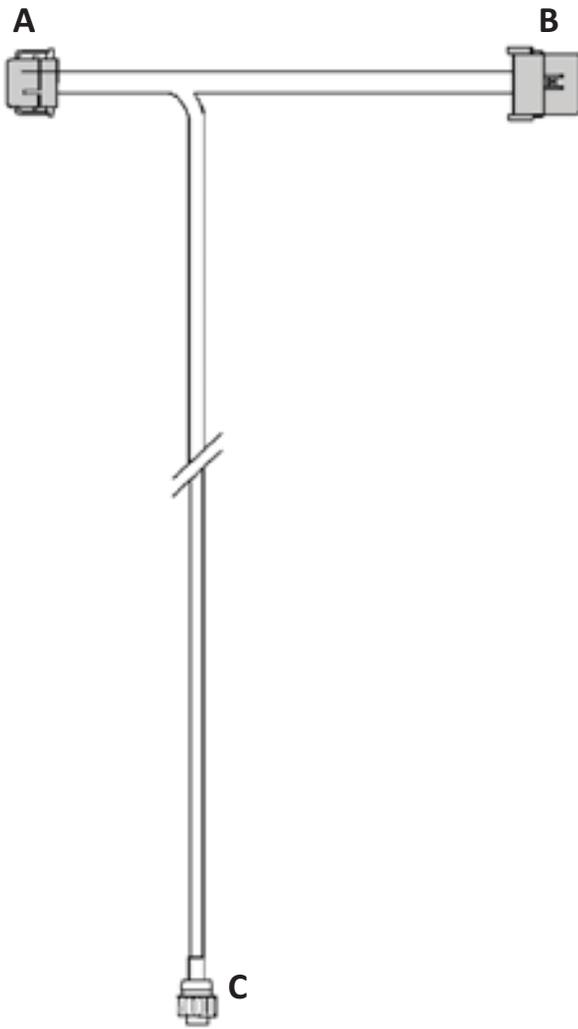
A - Deutsch 12 pin Plug

Pin No.	Function	To
1	CAN A HIGH I/O	B1
2	DIG OUT	B2
3	GPS TX	B3, C3
4	GPS RX	B4,C2
5	GPS GND	C1
6	UNUSED	—
7	VIDEO IN	B7
8	VIDEO GND	B8
9	PWR GND	B9
10	PWR +12V	B10
11	DIG GND	B11
12	CAN LOW I/O	B12

B - Deutsch 12 pin Receptacle

Pin No.	Function	To
1	CAN A HIGH I/O	A1
2	DIG OUT	A2
3	GPS TX	A3, C3
4	GPS RX	A4,C2
5	UNUSED	—
6	UNUSED	—
7	VIDEO IN	A7
8	VIDEO GND	A8
9	PWR GND	A9
10	PWR +12V	A10
11	DIG GND	A11
12	CAN LOW I/O	A12

C - AMP - 4 pin Plug (GPS)

Pin No.	Function	To
1	Ground	A5
2	GPS TX	A3,B3
3	GPS RX	A4,B4
4	Not Used	--

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**727124
JD Starfire GPS
Adapter**
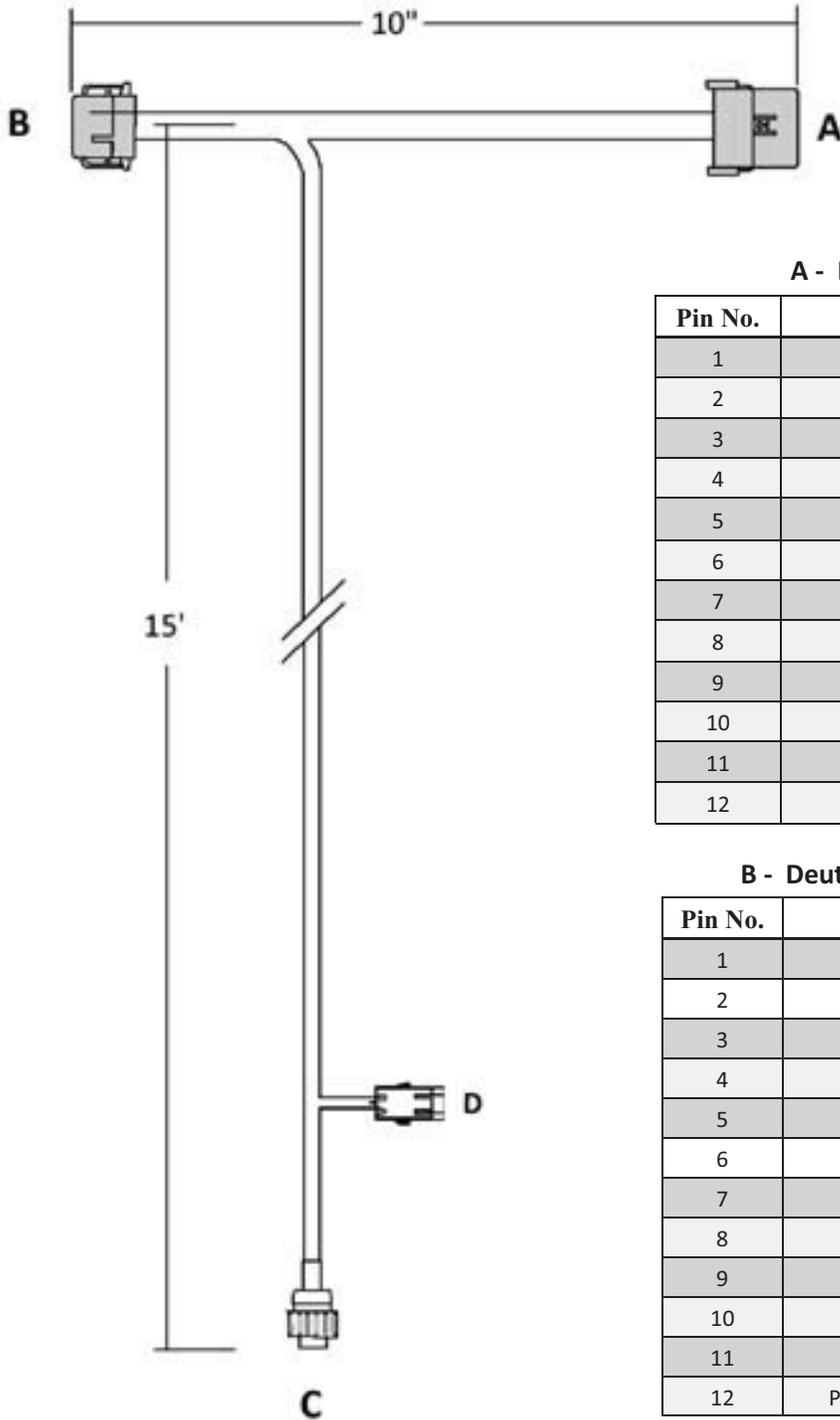
A - Deutsch 12 pin Plug

Pin No.	Function	To
1	Radar	B1
2	Not Used	B2
3	GPS TX	B3, C2
4	CAN HI	B4
5	Not Used	B5
6	Power Switch	B6, DA
7	Ground	B7, C1, DB
8	Not Used	B8
9	CAN LO	B9
10	GPS RX	B10, C3
11	Not Used	B11
12	Power Un-switched	B12

B - Deutsch 12 pin Receptacle

Pin No.	Function	To
1	Radar	A1
2	Not Used	A2
3	GPS TX	A3, C2
4	CAN HI	A4
5	Not Used	A5
6	Power Switch	A6, DA
7	Ground	A7,C1, DB
8	Not Used	A8
9	CAN LO	A9
10	GPS RX	A10,C3
11	Not Used	A11
12	Power Un-switched	A12

C - AMP - 4 pin Plug (GPS)

Pin No.	Function	To
1	Ground	A7,B7
2	GPS TX	A3,B3
3	GPS RX	A10,B10
4	Not Used	--

D - WeatherPack - 2 Pin Receptacle

Pin No.	Function	To
A	Power	A6, B6
B	Ground	A7, B7

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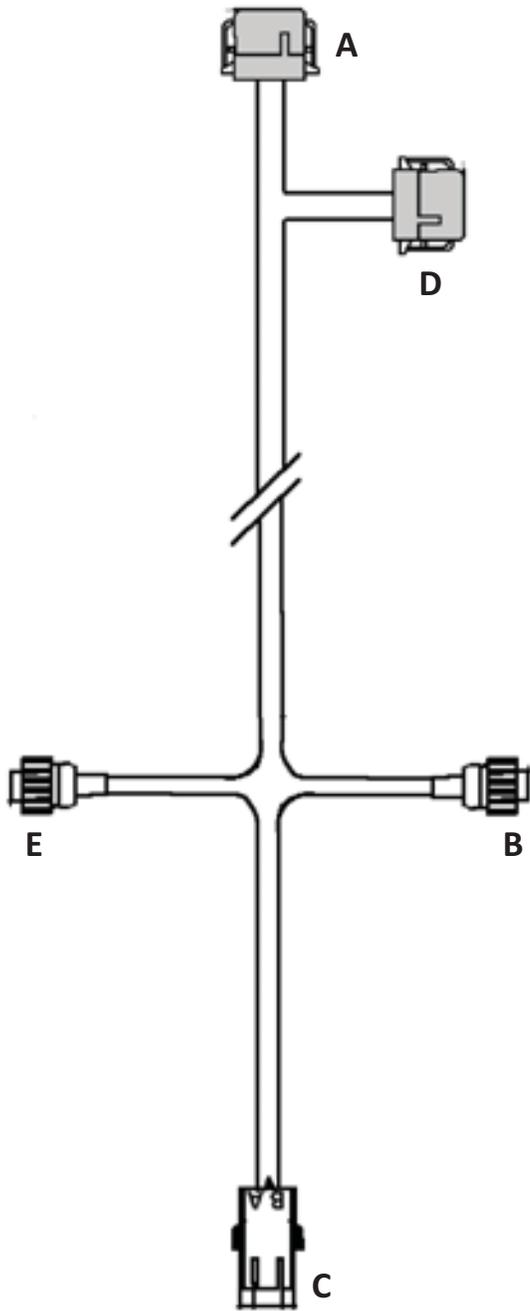
A - Deutsch 12 pin Plug

Pin No.	Function	To
1	CAN A High I/O	D1
2	Port 1 TX Out	B2, D2
3	Port 1 RX In	B3, D3
4	PPS Out	D4
5	Signal Ground	B1,D5,E1
6	Port 3 TX Out	D6, E2
7	Radar	D7
8	Port 3 RX In	D8,E3
9	Event In	D9
10	Power +12V	CA
11	Power Ground	CB
12	CAN A Low I/O	D12

B - Amp 4 pin Plug

Pin No.	Function	To
1	Signal Ground	A5,D5,E1
2	TX Out Port 1	A2, D2
3	RX In Port 1	A3,D3
4	Not Used	--

C - Weatherpack 2 pin Receptacle

Pin No.	Function	To
CA	Power +12V	A10
CB	Power Ground	A11

D - Deutsch 12 pin Receptacle

Pin No.	Function	To
1	CAN A High I/O	A1
2	Port 1 TX Out	B2, A2
3	Port 1 RX In	B3, A3
4	PPS Out	A4
5	Signal Ground	B1,A5,E1
6	Port 3 TX Out	A6, E2
7	Radar	A7
8	Port 3 RX In	A8,E3
9	Event In	A9
10	Not Used	—
11	Not Used	—
12	CAN A Low I/O	A12

E - Amp 4 pin Plug

Pin No.	Function	To
1	Signal Ground	A5,D5,B1
2	TX Out Port 3	A6,D6
3	RX In Port 3	A8,D8
4	Not Used	--

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