5 March 2009

EZ-Guide 500 Lightbar or NavController II: Outputting NMEA data to a John Deere GS2 Display

This document describes how to output NMEA data from the Trimble® *Ag*GPS® EZ-Guide® 500 lightbar or the Autopilot™ NavController II to the John Deere GS2 display.

Description

The John Deere GS2 display does not accept NMEA data from a Trimble receiver or the NavController II because the GS2 display:

- uses a GPS position with lower precision than is supplied by the lightbar or the NavController II.
- does not accept an XP/HP or RTK position from an external receiver.

The GS2 display does not accept NMEA data from a stand-alone EZ-Guide 500 lightbar that uses OmniSTAR XP/HP or RTK as the correction source.

Solution

Do one of the following:

- Use one of the Trimble receivers listed.
- Use an EZ-Guide 500 lightbar that is configured to output less precise NMEA data that will be accepted by the GS2 display.
- Use a NavController II that is configured to output less precise NMEA data that will be accepted by the GS2 display.

Trimble receivers

Use one of the following receivers, configured as described in Connecting to the John Deere GS2 display.

- AgGPS 106
- AgGPS 110
- AgGPS 114
- AgGPS 124
- AgGPS 132

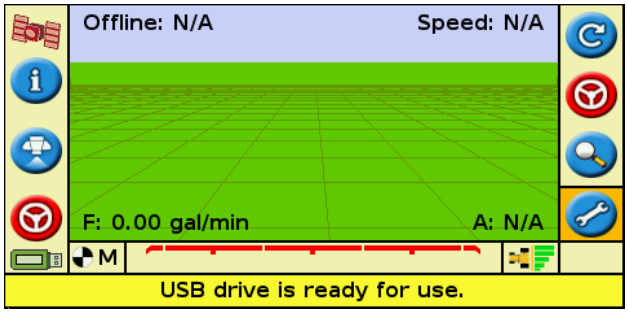
Trimble Navigation Limited, Agriculture Division, 10355 Westmoor Drive, Suite #100, Westminster, CO 80021, USA

EZ-Guide 500 lightbar

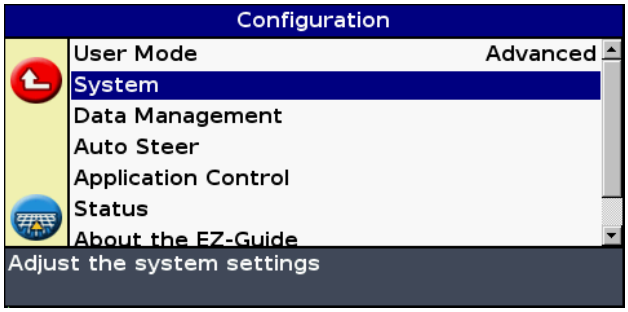
Note: *The GS2 display accepts NMEA data only if the lightbar is in WAAS mode.*

To configure the lightbar:

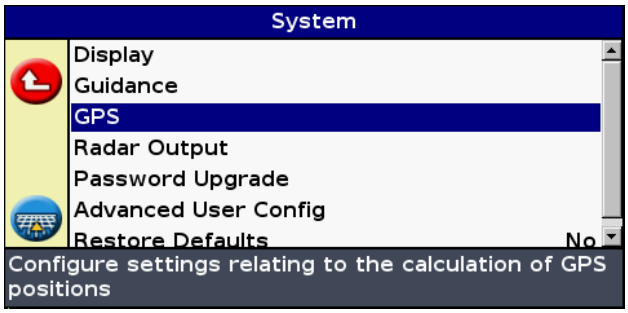
1. Select the Wrench icon and then press **OK**.



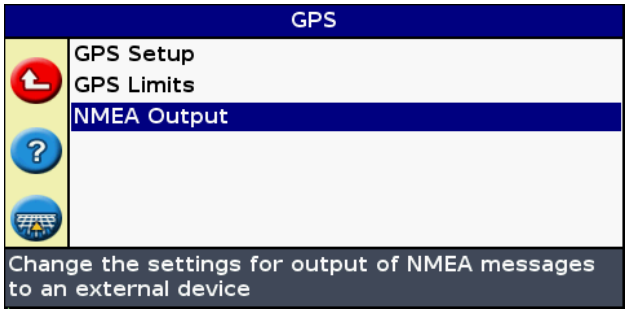
2. Select *System* and then press **OK**.



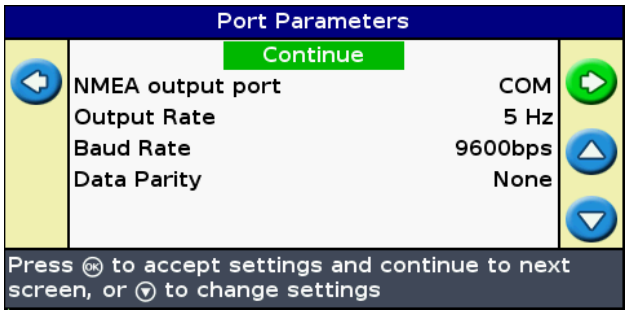
3. Select *GPS* and then press **OK**.



4. Select *NMEA Output* and then press **OK**.

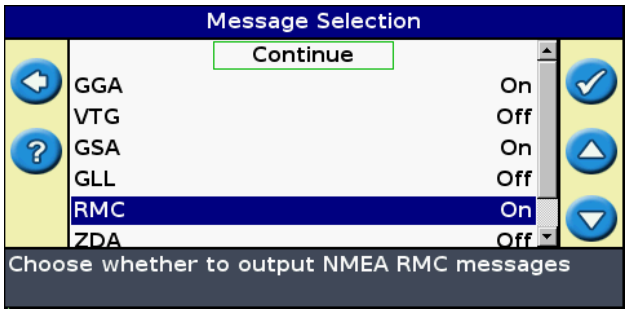


5. Highlight *Continue* and then press **OK**.



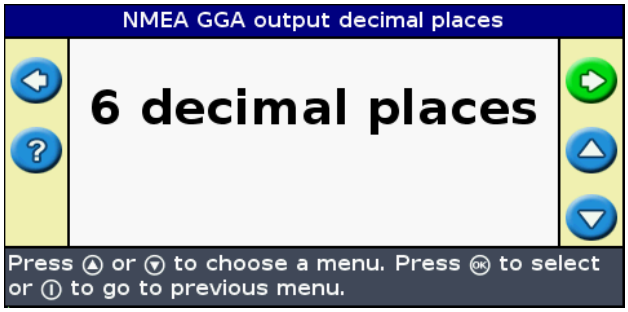
6. Turn on the NMEA messages that the GS2 display requires. Use the arrows to select in turn GGA, GSA, and RMC. Press **OK** for each message.

   Select *Continue* and then press **OK**.



7. Use the down arrow to change the number of decimal places in NMEA GGA Output to 6.

   Press **OK** to accept the changes and then return to the home screen.



NavController II

The NavController II must have firmware version 5.0 or later installed.

1. Configure the following:

Parameter	Set to
RawNMEAOutputMaxLLAPrecision	6
RawNMEAOutputMaxQuality	2 (if using OmniSTAR XP/HP) or RTK
RawNMEAOutputIntervalRMC	500 (5 Hz) or 1000 (1 Hz)

2. Use the Autopilot Toolbox II software version 2.85 to configure the following Advanced Configuration options:

   a. Use the Autopilot display to disable NMEA output in the NavController II. For details on how to do this, refer to the *User Guide* for your display.

   b. Turn on the NavController II and then connect the software.

   c. Press *Tools* / *Advanced Configuration*.

   d. In the *Name* field, enter **RawNMEAOutputMaxLLAPrecision**.

   e. Press *Get*.

   f. In the *Value* field, enter **6**.

   g. Press *Set*.

   h. Repeat step d through step g as required for other options.

   i. Close the Toolbox II software.

   j. Use the Autopilot display to enable NMEA output in the NavController II.

This allows the GS2 display to accept NMEA data well as OmniSTAR XP/HP or RTK accurate positions from the *Ag*GPS 252, *Ag*GPS 332, *Ag*GPS 432 and *Ag*GPS 442 through the NavController II.

Connecting to the John Deere GS2 display

Use the John Deere RS232 Harness kit (John Deere P/N PF90363), which includes the harness, null-modem cable, gender changer, and instructions for correct installation.

Set the following parameters:

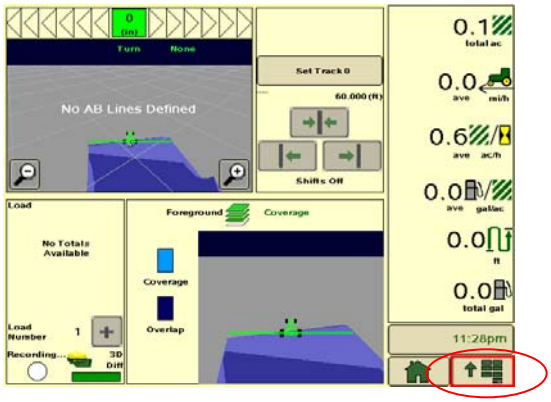
- GGA, GSA, and RMC NMEA messages
- Baud rate: 19200
- Data bits: 8

- Parity: none
- Stop bit: 1
- Flow control: none
- Output rate: 1 Hz or 5 Hz (Trimble recommends 5 Hz for guidance)

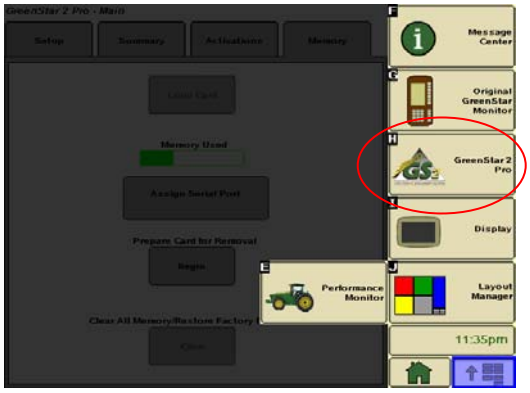
Configuring the John Deere GS2 display

Configure the serial ports to accept serial GPS data:

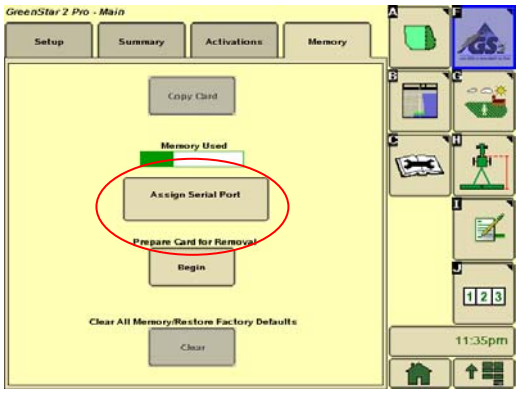
1. In the Home screen of the GS2 display, tap the lower right button.



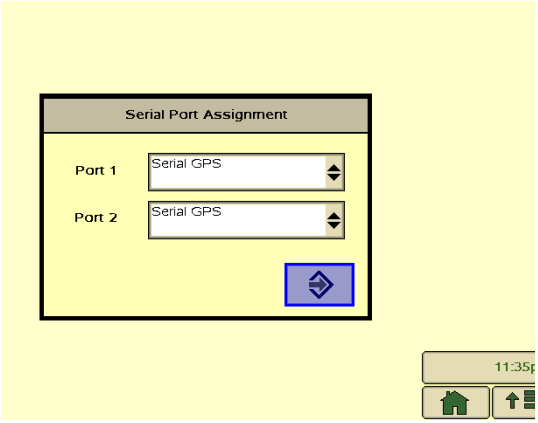
2. Tap **GreenStar 2 Pro**.



3. Tap **Assign Serial Port**.

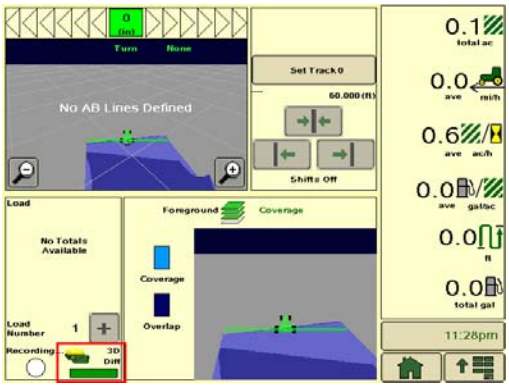


4. For the port that communicates with the GS2 display, select *Serial GPS* from the drop-down list.



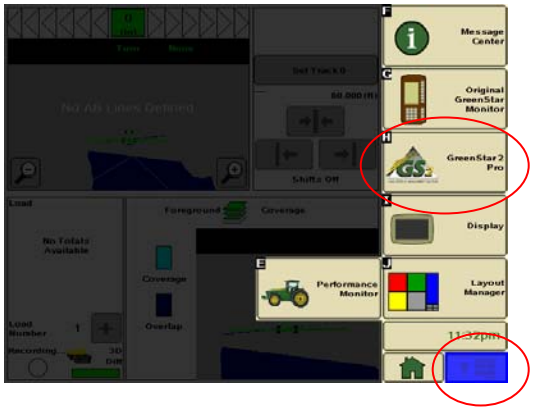
Checking the GPS status in the John Deere GS2 display

The GPS status appears on the Home screen.



To view more detailed GPS information:

1. On the Home screen, tap the lower right button and then tap **GreenStar 2 Pro**.



2. Tap the Wrench icon.

GPS information appears.

3. To view more information on the next page, tap the right arrow.