

INSTALLATION MANUAL

Agra-GPS CNH-JD Bridge for Patriot Sprayer 2017-2022



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Release Notice

This is the February 2026 release of the CNH-JD Bridge for 2017-2022 CNH Patriot Sprayers.

Disclaimer

While every effort has been made to ensure the accuracy of this document, Agra-GPS Ltd assumes no responsibility for omissions and errors. Nor is any liability assumed for damages resulting from the use of information contained herein. Agra-GPS Ltd shall not be responsible or liable for incidental or consequential damages or a loss of anticipated benefits or profits, work stoppage or loss, or impairment of data arising out of the use, or inability to use, this system or any of its components.

DO NOT USE THE CNH-JD Bridge IF YOU DISAGREE WITH THE DISCLAIMER.

Important Safety Information

Read this manual and the operation and safety instructions carefully before installing the CNH-JD Bridge.

- Follow all safety information presented within this manual.
- If you require assistance with any portion of the installation or service of your equipment, contact your Agra-GPS for support.
- Follow all safety labels affixed to the system components. Be sure to keep safety labels in good condition and replace any missing or damaged labels. To obtain replacements for missing or damaged safety labels, contact Agra-GPS.

When operating the machine after installing the CNH-JD Bridge, observe the following safety measures:

- Be alert and away of surroundings.
- Do not operate the CNH-JD Bridge system while under the influence of alcohol or an illegal substance.
- Remain in the operator's position in the machine at all times while the CNH-JD Bridge system is engaged.
- Determine and remain a safe working distance from other individuals. The operator is responsible for disabling the CNH-JD Bridge system when a safe working distance has been diminished.
- Ensure the CNH-JD Bridge is disabled prior to starting any maintenance work on the machine or parts of the CNH-JD Bridge system.
- Follow all safety instructions from the CNH system as well as the JD system!
- The CNH-JD Bridge must only be used in the field, never on the street!

Electrical Safety

- Always verify that the power leads are connected to the correct polarity as marked. Reversing the power leads could cause severe damage to the equipment.
- Verify that all cables and connectors are not going over sharp edges and are not pinned, as this could cause power shortages and/or malfunctions.

Introduction

Congratulations on your purchase of the CNH-JD Bridge. The CNH-JD Bridge is designed to bridge the communication between CNH Patriot Sprayer and a John Deere display (1800, 2600, 2630, 4240, 4640, or the new 5th gen display). This allows a JD display to create maps in the John Deere format and provides straight AB-Line autosteer.

The operator uses the JD display to create AB-lines. The current position is determined by a John Deere receiver and all this information is used by the CNH-JD Bridge to create steering instructions for the tractor. All conditions for autosteer such as minimum speed, steering enabled etc. must be met by the CNH system before the autosteer engage option in the tractor can be activated.

NOTICE

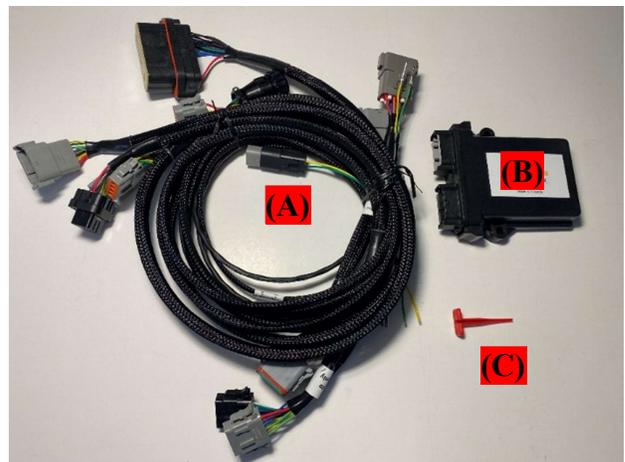
This manual is not intended to replace the manuals for the tractor or the John Deere system. The operator must read and understand the manuals and instructions of these systems, before using the AgraGPS CNH-JD Bridge.

What's In The Box

In your order you should receive the following items:

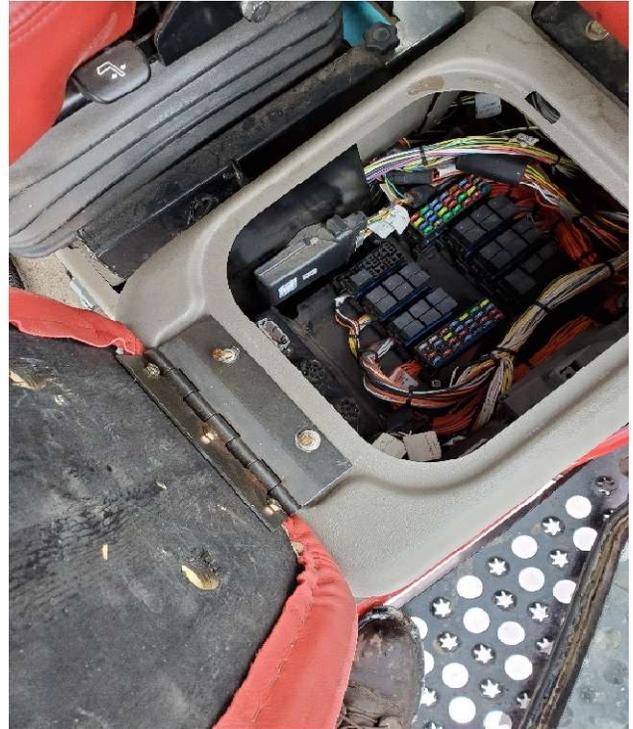
- a. CNH-JD-PT Harness Kit
- b. CNH-JD-PT Bridge
- c. Red Removal Tool
- d. Wheel Angle Sensor
- e. (optional) RAM monitor mount
- f. (optional) JD receiver mount

NOTE: If you are missing any of these items or they appear to be damaged please contact:
+1 (825) 247-2477 or support@agragps.com



Step 1: Harness Installation

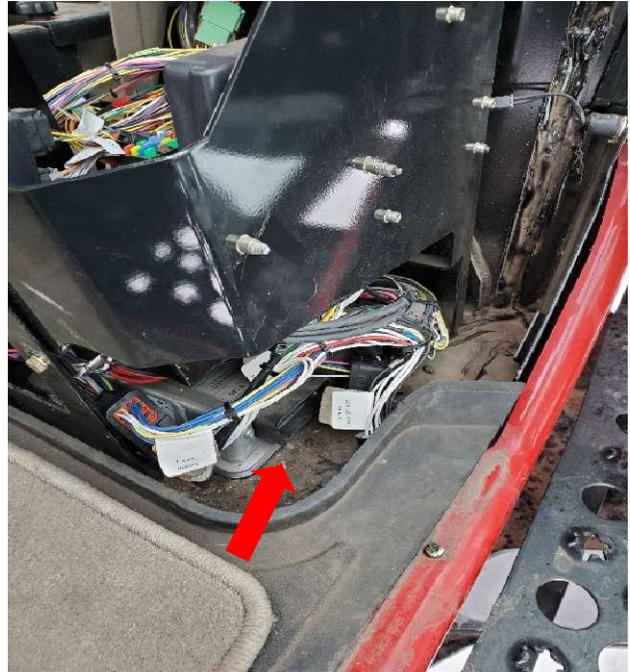
Remove the buddy seat



Remove the plastic cover that was under the buddy seat, there are bolts under the rubber floor mat that must be removed.



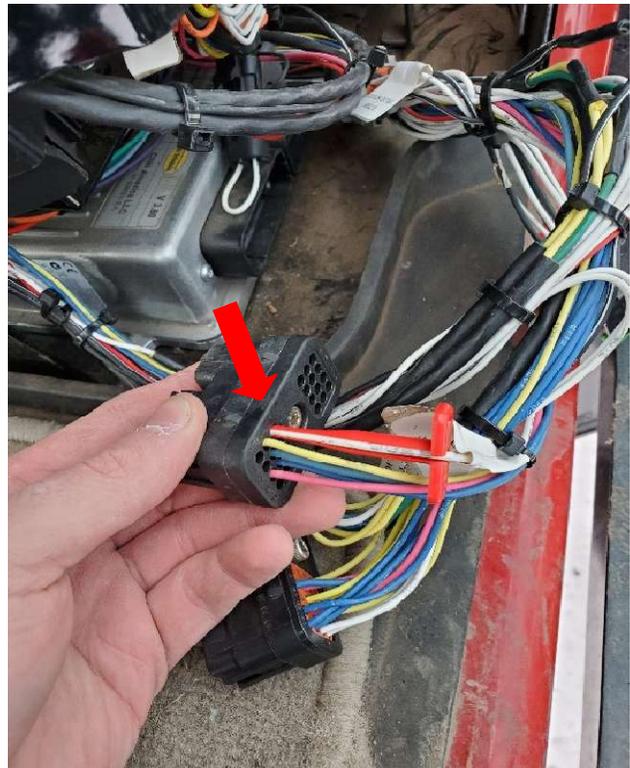
At the bottom, underneath the fuse panel there will likely be a large silver CNH navigation controller. Remove both the 40 and 24 pin connectors from the control unit.



Using the included removal tool, remove the wire in pin 3 of the 24-pin connector. Once removed, push the pin into pin 7 of the 40-pin connector.

The 40-pin connector now has all connections required to run steering operations.

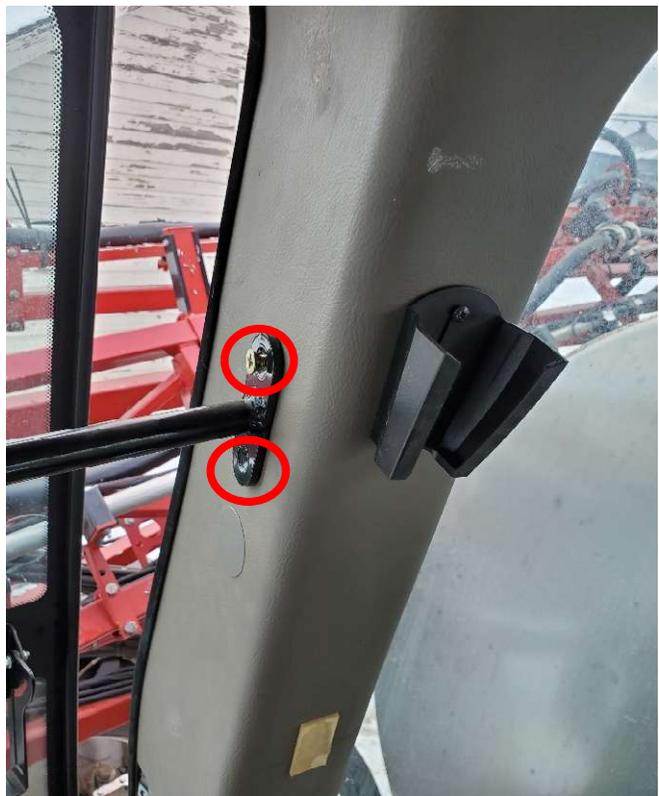
Connect the 40-pin connector of the Agra-GPS adapter.



Next you will require access to the cabling behind the right rear corner post.



Remove the bolts holding the crossbar to the corner post.



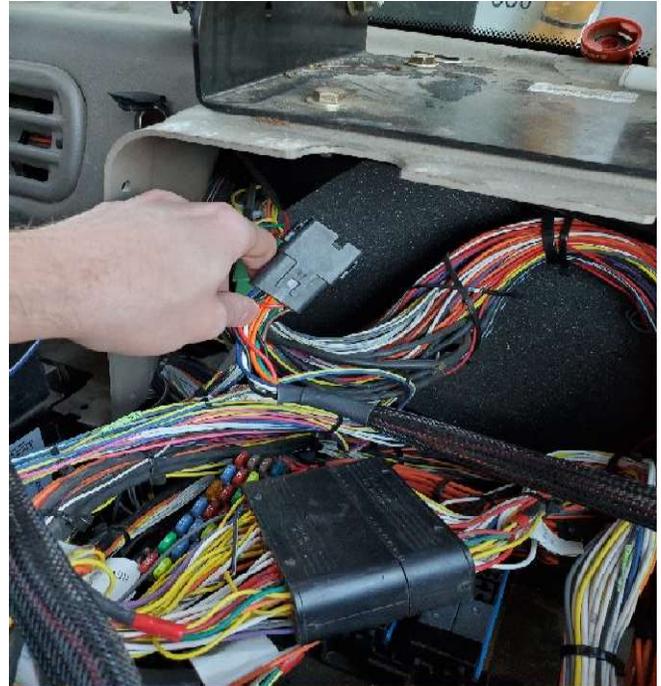
Remove the side door latch.



Remove the plastic cover revealing the post cabling.



The 40-pin adapter connector must be fed through to the buddy seat (fuse panel) area. It can be fed through from below the right corner post, behind the plastic behind the seat, and through to the 40-pin machine connector at the fuse panel.



The “vent” behind the seat can be removed to assist in feeding the cable through to the corner post. Also, rubber cup-holders may be temporarily be removed to help with access.



Find the connector labelled C602 behind the panel. Open it and insert the 12-pin DTM connectors of the provided AgraGPS harness.

NOTE: It is sometimes also called the “color display” connector. If you do not have a display you may only see one open connector. If a display cable exists, open the connection and insert the AgraGPS connectors.



Then connect the 12-pin black mini Deutsch and the 12 pin grey mini Deutsch plugs to the bridge. The bridge can be left behind the plastic cover below the pillar post cover. It can be easily accessed while the side door is open.

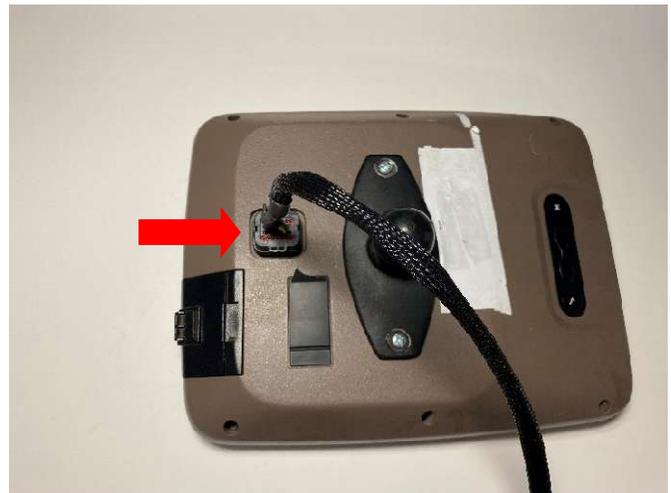


The monitor cable can be routed from where the bridge is placed to where the JD monitor is mounted.



Then connect the harness to the monitor. The monitor can be mounted using RAM components, which can be ordered from Agra-GPS.

Note: The back of your display may look different but this connector will work for all displays.



Roof Harness Installation (as required)

Many Patriot machines do not have the necessary CANbus connection at the 12-pin Deutsch roof-top receiver connector. This can be determined by measuring the voltage on pins 2 and 4 (ground is pin 12, or machine frame). Each of these two pins must measure between 2 to 3 volts. If not, a CANbus cable must be installed, and wiring for this is provided in the kit.

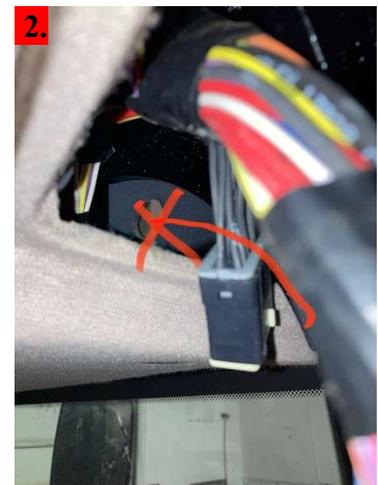
First, open the roof panel. If there is existing wiring in the pin 2 and 4 of the receiver connector, then remove these, and securely cap and stow.

Option A: Extend CANbus from X-015M1

There may be a round rooftop connector labelled X-105M1 located within about 60cm from the receiver connector. If so, there should be CANbus voltage at pins 7 (CAN-H) and 8 (CAN-L). Use the 80cm yellow/green wires provided and splice into pin 7 (yellow) and pin 8 (green). Then insert these into the receiver connector: pin 2 (yellow) and pin 4 (green).

Option B: Extend CANbus from the corner post

A 12-pin DTM connector with a 250cm 2-wire CANbus cable is provided (with a 4-pin CAN terminator on the other end). At the corner post, connect the grey DTM to the open 12-pin receptacle. Route this cable as shown.



Step 2: Mounting the JD receiver

The mounts for the JD display and receiver are NOT part of the CNH-JD Bridge kit, but can be ordered separately.

The JD mount can easily be bolted to the metal bracket provided on the roof of the CNH Patriot.



Using the short 12-pin adapter cable, the JD receiver is connected to the 12-pin Deutsch in the CNH tractor roof.

DO NOT CONNECT the John Deere GPS receiver without the adapter cable to the CNH roof outlet.



Step 3: Wheel angle sensor installation

The machine requires the installation of a wheel angle sensor.

The sensor kit includes these components:



The sensor is installed on the hydraulic cylinder of the front right wheel.



Use supplied bolts to install L bracket on outside end of the right-side steering cylinder. Place the L bracket on the front.



Place the clamp on the steering cylinder tube, then install the sensor housing bracket on the back side.



Install threaded rod with ball joints to connect both brackets.

For best accuracy: Have wheels pointing straight, and adjust ready rod to have sensor arm pointing straight forward.



Locate the 4-pin DTM plug which connect to the CNH steering sensor. Disconnect the plug.



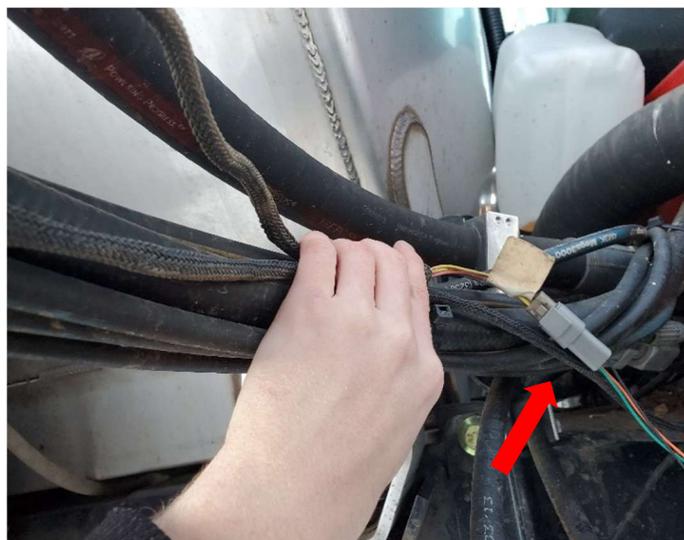
Cut the zip ties in order to bring the female plug closer to the chassis of the machine.



Bring the plug closer to the chassis of the machine and replace the cut zip ties.

Then connect the wheel angle sensor connector to the 4-pin DTM female.

The other end of the adapter will connect directly to the sensor.



Step 4: Calibration

Refer to the Bridge User Manual for basic steps to access the Virtual Terminal on the JD monitor, where the Bridge ISO app can be found. **NOTE:** If you do not have the Bridge User Manual it can be found at agragps.com.

****CAUTION**** For safety, ensure nobody and no object is near the front wheels, as the wheels will move during this process.

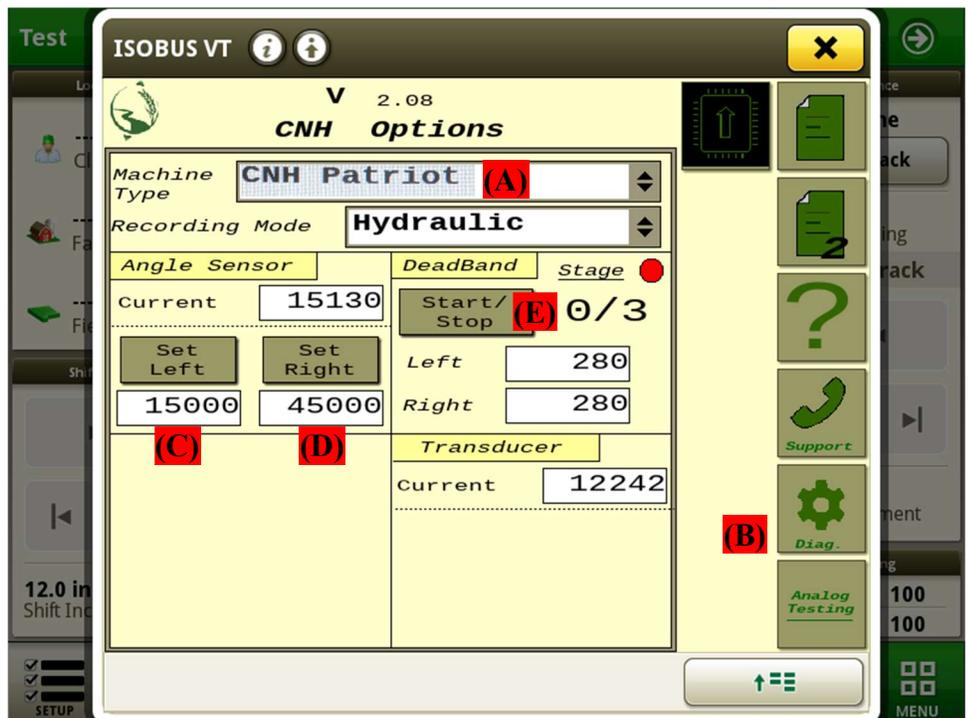
(A) Main page: ensure “CNH Patriot” is selected in the Machine Type drop-down

(B) First verify that the valve can be driven to steer the front wheels in the correct direction. For this, there is an “Analog Testing” page. At the bottom, select the “Activate” checkbox. Then press-and-hold the arrow buttons to confirm the front wheels steer correctly. If they do not move, there is likely a wiring problem. If they move but are left-right backwards, then select the “Reverse Steering Valve” checkbox on the main page.

The wheel angle sensor value is shown (as “Current”). The minimum possible value is 0 (to the left), and the maximum is 65535 (to the right). It should not display either the maximum or minimum if the sensor is connected correctly. If the left value is higher than the right, then you must select the “reverse wheel angle” checkbox on the main page.

(C) On the Analog Calibration page, turn the wheels all the way to the left and press “Set Left”, it will save the value in the box next to the button.

(D) Turn the wheels all the way to the right, and press “Set Right”



Next the dead band of the valve must be set.

(E) To automatically calibrate, center the wheels and press “Start”. The automatic calibration procedure can take up to 10 minutes.

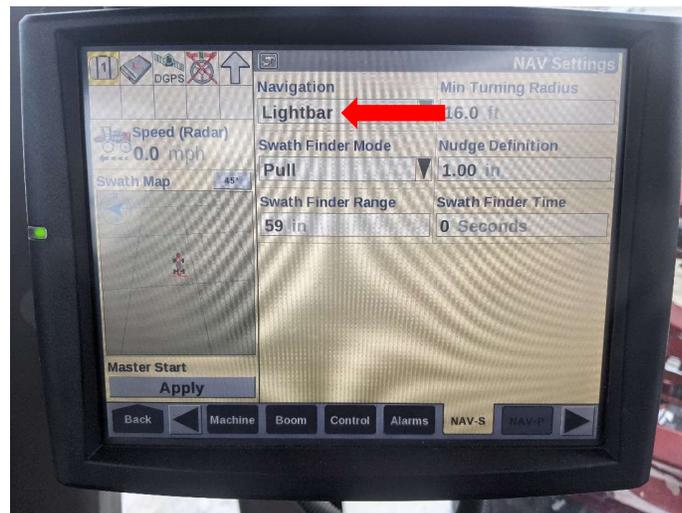
Step 5: Pro 600/700 GPS

To allow the Pro 600/700 display to receive GPS information from the bridge, ensure the following settings are applied in the monitor.

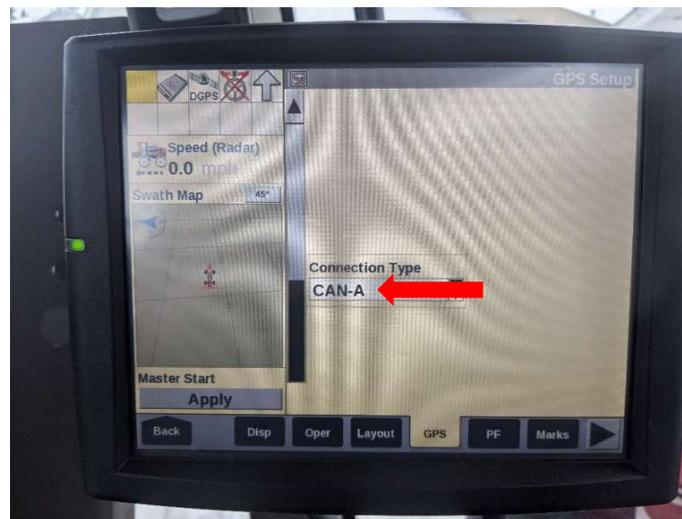
Set GPS model to “372”



Set Navigation to “Lightbar”

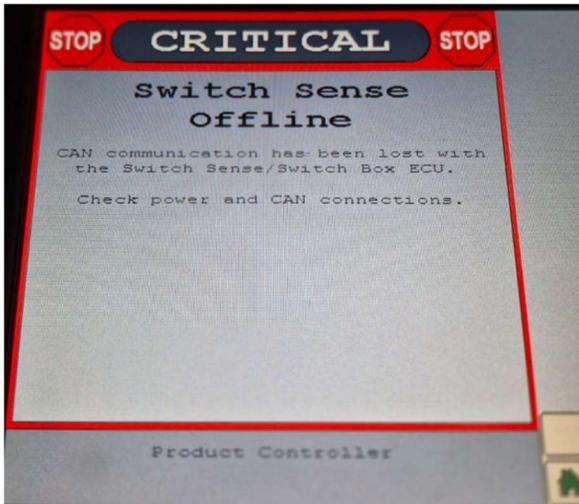


Set connection type to “CAN-A”



Troubleshooting

If a monitor (Pro700 or Raven Viper) was plugged into the 16-pin round connector on the front corner post, and it is removed, then there may be an ECU that complains.



This can be solved by installing a connector on the 16-pin, which shorts pins 3 and 4 together. This connector is available from Agra-GPS on request, and it is also designed to allow plug-in of the JD monitor on the front corner post.

Additional Notes

- Patriots 2019 and newer use ISO compliant rate controllers, and so section control works with JD Gen4/5 displays
- Older Patriots do not have ISO compliant rate controllers, and so the Pro700 must be used. GPS is supplied to the Pro700 from the Bridge's NMEA2000 output.