INSTALLATION MANUAL

Agra-GPS CNH-JD Analog Bridge for 2014-2017 Row Crop Tractors (Analog Steer)

MAKE: Case IH or New Holland or Steyr
MODEL: Puma, T7, Steyr CVT
YEAR: 2014-2017

Version 1.1

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Release Notice

This is the November 2024 release (version 1.1) of the installation manual for the CNH-JD Bridge for row crop tractors (2014-2017).

Disclaimer

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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 a Case Puma or New Holland T7 row crop tractor (2014-2017) (autosteer ready) and a John Deere display (1800, 2600, 2630, 4240, 4640, or G5). This allows a JD display to create maps in the John Deere format and also provides JD 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.

The CNH-JD-RA kit consists of:

1. The JD-Bridge itself
2. A harness from the JD-Bridge to the JD Monitor and to the JD StarFire Receiver
3. - An adapter cable for the ISO communication and power (grey 12-pin connector)
4. An adapter for valve, operator override etc. (black 12-pin connector)

Preliminary

Park the machine where the ground is level, dry and clean. Leave the machine OFF during the installation. Follow safety practices and read the instructions carefully as you proceed through the install process.

Step 1: Open the Nav controller cover

Remove the control cover on the left side behind the buddy seat.
The cover is connected with three Phillips screws.

Locate the 40-pin deutsch and 24-pin deutsch which may be connected to a nav controller (if equipped). Disconnect both from the nav controller.

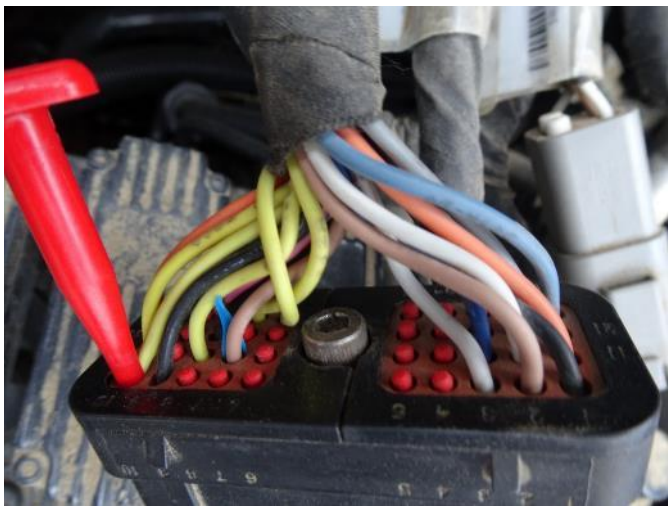
Note: The nav controller is not required and can be removed if it is installed.

Move a wire from the 24-pin connector and re-pin it to the 40-pin on the same cable.

FROM: pin 3 of the 24-pin
TO: pin 7 of the 40-pin

This is typically done using a red deutsch removal tool (shown).

NOTE: the 26-pin connector is unused by the Agra-GPS Bridge system.

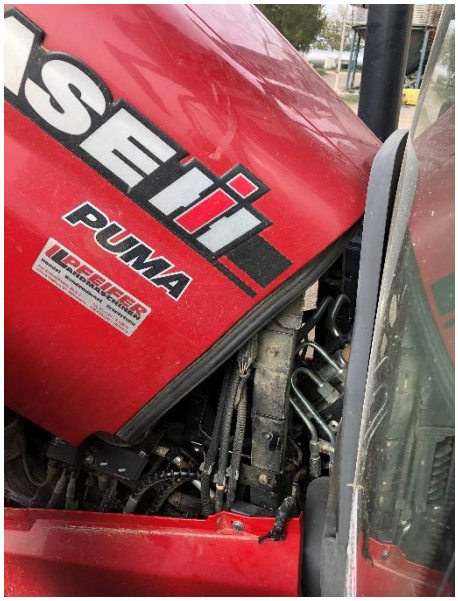


Use the 1st adapter which has the black 12-pin deutsch connector, the big black 40-pin deutsch connector and the long cable to the 2-pin deutsch (DT).
Connect the black 40-pin deutsch of the adapter to the 40-pin from the machine that was modified in the last step.

Run the 2-pin deutsch under the floor in the inside cab to the front where the clutch is located. There you can find an outlet with a rubber pad.

Cut the rubber pad and run the cable to the outside under the hood.

The valve sits outside in the front of the cab and may be difficult to reach. Lift the tractor hood to allow for better access.



Remove the existing 2-pin connector from the valve block and connect the 2-pin from the adapter. Secure the cable away from any heat source and moving parts. Use plastic cable ties.

Use the 2nd adapter which has the grey 12 Pin Deutsch connector and at the other end the ISO in-cab connector and the Diagnostic connector.

Connect both connectors. The diagnostic connector has to be connected to the top diagnostic port.

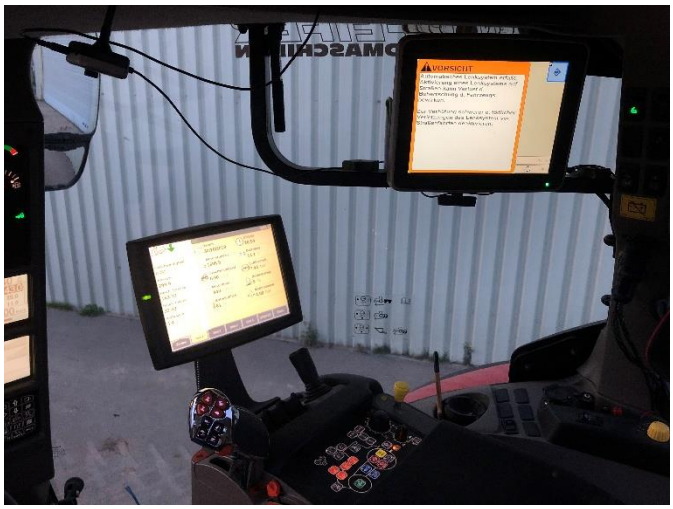
The ISO has to be connected to the in-cab ISO socket.

Note:
Some Steyr models have it behind a cover behind of the cab.

Note:
Some tractors don´t supply battery power at the ISO in-cab socket. In this case the JD display won´t shut down correctly and doesn´t save the data after turning off the tractor.
Run a wire from the grey 12 Pin deutsch (Pin 6) to a constant 12V power source to solve the problem.

Now take run the main harness to the outside off the cab to the JD receiver mount.

Also run the harness from the to the John Deere display (here a 2630).



Reinstall covers on the tractor and secure all loose cables away from moving parts and heat sources.

Important – The steer enable switch must be active in order to begin autosteering. To make this switch active, move the switch to the downwards position from the upwards position (so the switch is <u>not</u> lit up), AFTER the machine has already been started. If the switch is lit, the machine is considered to be in "road mode" and will not autosteer.

Step 6: ISO Application

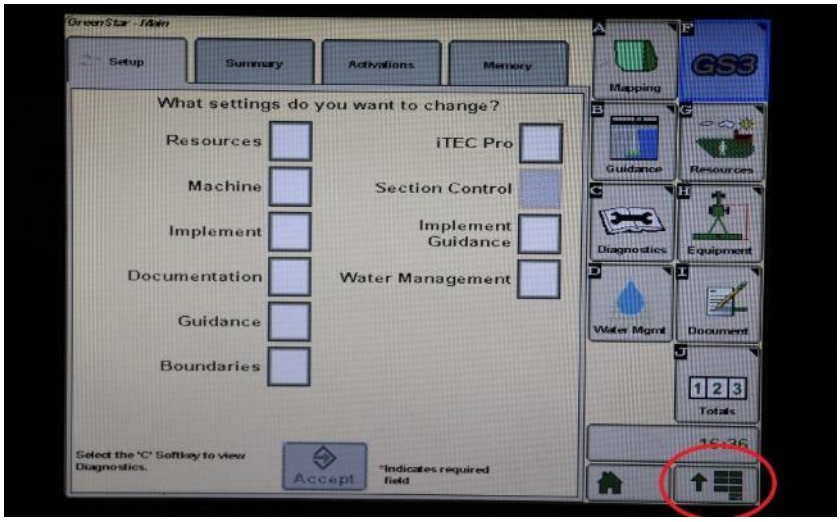
The CNH bridge comes with an ISO application that will be loaded onto the John Deere monitor. The app should automatically store itself on the monitor after the first few minutes of the initial startup. On subsequent runs the app will load itself from memory as soon as possible. The CNH app includes:

- Calibration
- Option to change work recording mode
- Option to change the machine type
- Optional autosteer engage button & status
- Help and Support page
- Diagnostic Page
- Advanced testing page

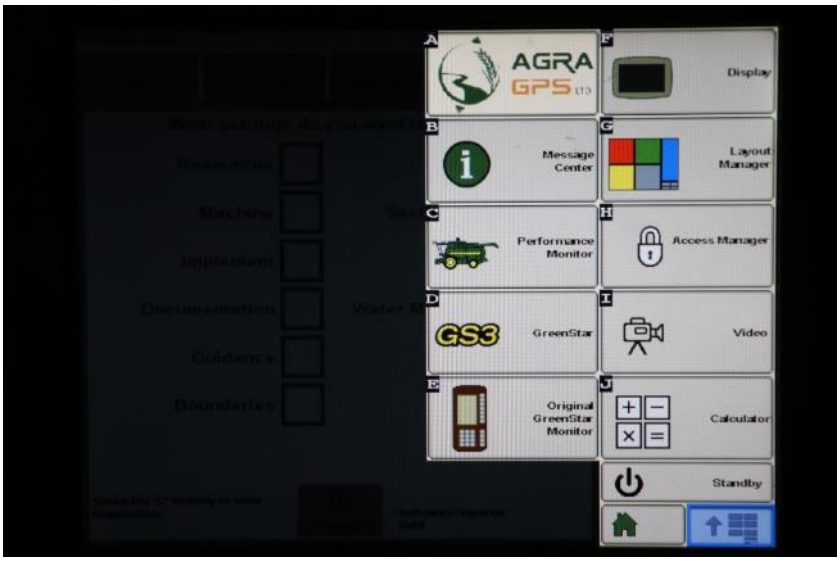
Where to find the CNH ISO application on the John Deere monitor:

- On a John Deere 4640 the application will be loaded in the ISOBus VT section on the main page of the display.

- On John Deere 1800, 2600, 2630 the application will be shown in the side menu of the John Deere display. The side menu is opened by clicking the button on the bottom right of the display.



- **NOTE:** John Deere 1800 and 2600 monitors do not show a loading bar for ISO applications, while 2630 and 4640 monitors do.



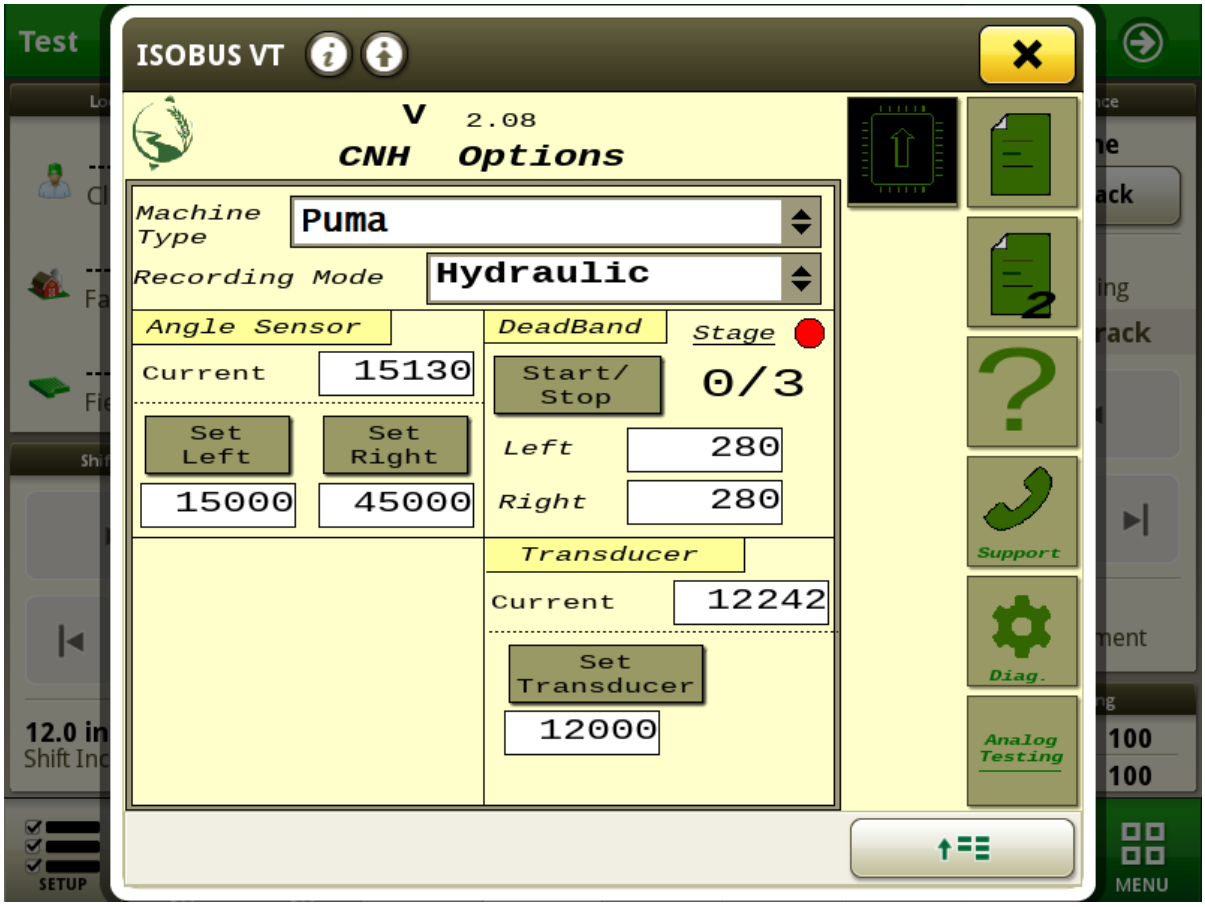
If the ISO application is not loaded:

- Try clearing the monitor's memory. On 2630 monitors this can be done in the Message Center in the side menu. Go to the Cleanup tab, check controllers, then Begin Cleanup. On 4640 monitors this can be done in the info page of the ISOBus VT. Navigate to the ISOBus VT window and click the info button at the top of the page, then press Clean Up ISO Bus VT.

- Do a hard reset of the John Deere monitor (Unplug it, then plug it back in).

- Do a full restart of the machine. Remember the app may take a few minutes to load.

Step 7: Calibration (CNH) - ISOApp

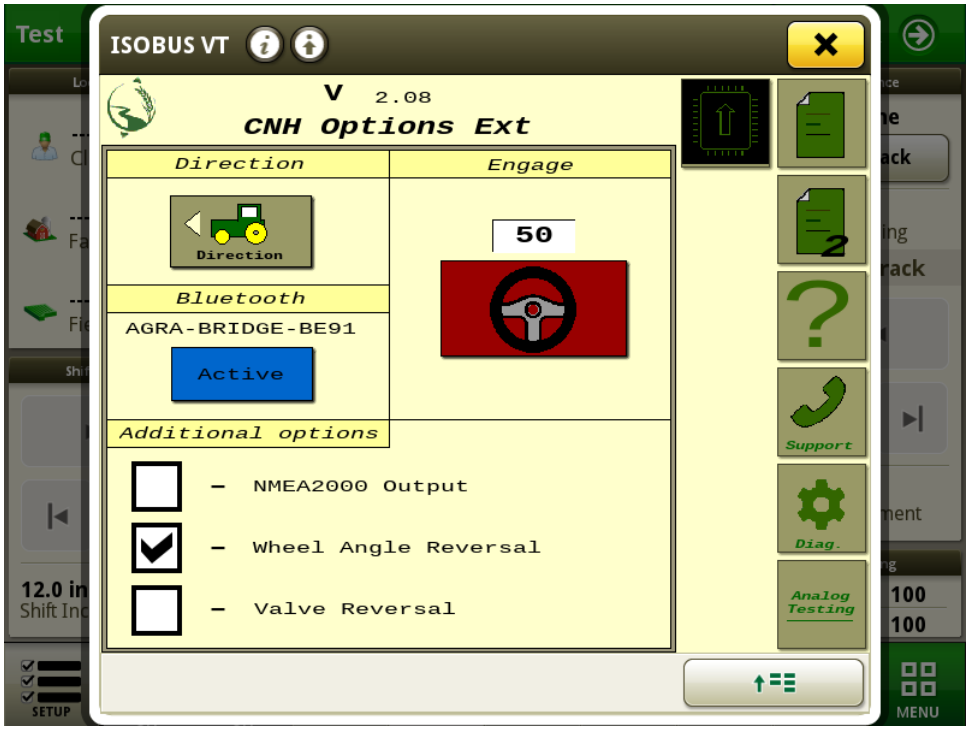


Note: Newer versions of the AgraGPS ISO app may have slight differences in layout and functionality.

Step 1 – Angle Sensor: Allows the user to set the left and right max of the CNH machine. To calibrate, steer as far left as possible and press, "Set Left". Then, steer as far right as possible and press, "Set Right". Ensure that the recorded "Right" value is higher than the "Left" value, and that the two values are in the thousands (note: this is opposite from Bridge versions prior to v2.00, where the Left value is higher than the right). If the values are reversed, the setting "Wheel Angle Reversal" must be toggled (see next page), and this step repeated.

Step 2 – Transducer: Allows the user to set the steering wheel movement detection. While the machine is running, ensure the wheel angle is straight and the machine is in park. Then, press, "Set Transducer". (Technical note: the threshold for tripping movement detection is +/- 25% from the setpoint)

Step 3 – Deadband: Allows the user to calibrate the deadband of the valves. Ensure the perimeter around the machine is clear and press the Start/Stop button to begin. Steering wheels will move in response to the calibration routine. An indicator will blink yellow while calibration is in progress and will take approximately five minutes. As a rule of thumb, smaller deadband values cause the steering to change more quickly than larger values.



Showing "Wheel Angle Reversal" and "Valve Reversal" options. If these options are changed, calibration must be repeated.