

T3RRA



1.6 | How T3RRA Software Works with John Deere iGrade™

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Contents

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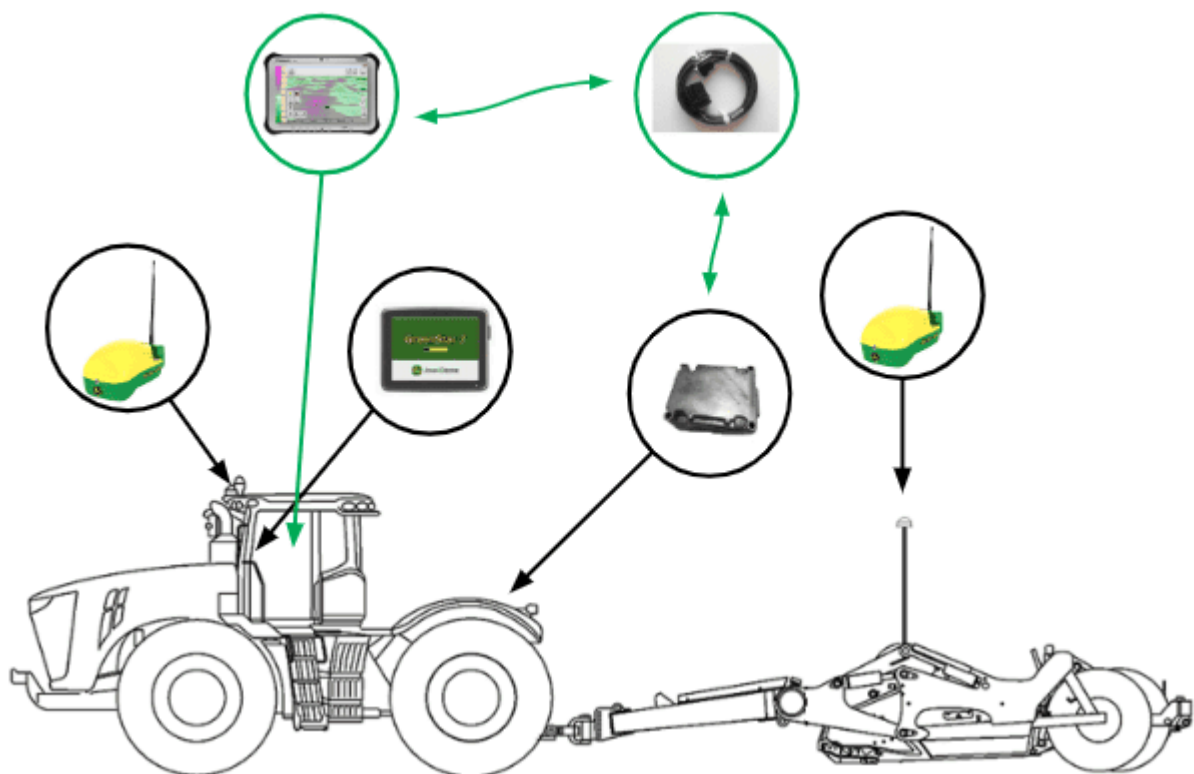
- Verify iGrade™ First
- Communication Between T3RRA and iGrade™
- Configuring Remote Control
- Connection Status
- GNSS Connectivity

1.6 | How T3RRA Software Works with John Deere iGrade™

John Deere iGrade™ is an integral part of the T3RRA machine-control solution. While T3RRA software provides terrain design, guidance and implementation functionality, **John Deere iGrade™ performs the hydraulic machine control** required to operate the implement.

Because both systems work together, the performance of T3RRA software is directly dependent on iGrade™ being correctly installed, configured and calibrated. If iGrade™ is not operating correctly, T3RRA software will not be able to achieve reliable machine control.

- John Deere provides comprehensive documentation covering the installation, configuration and operation of **iGrade™**. Rather than duplicate that information, this chapter explains how T3RRA software interfaces with **iGrade™** and highlights the settings required for reliable operation. For detailed information regarding iGrade™ operation, configuration or troubleshooting, always refer to the official John Deere **iGrade™** documentation or contact your local John Deere dealer.



Verify iGrade™ First

Although T3RRA software relies on iGrade™, the reverse is not true—**iGrade™ can operate independently of T3RRA software.**

When commissioning or troubleshooting a system, first confirm that iGrade™ is operating correctly on its own. Once normal iGrade™ operation has been verified, configure and test T3RRA software. This approach greatly simplifies fault finding and helps isolate whether an issue originates within iGrade™ or the T3RRA software.

Communication Between T3RRA and iGrade™

T3RRA software communicates with John Deere iGrade™ through the **iGrade™ Remote Control Harness**. For communication to operate correctly, the serial communication settings of both systems must match.

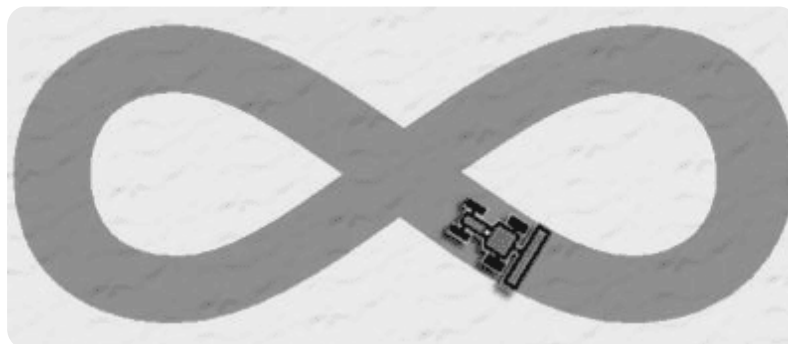
If an **iGrade™ UCC1** controller is used, configure:

- Baud rate: **38400**
- NMEA output: **GGA & GSA**
- Update rate: **5 Hz**

If an **iGrade™ UCC2** controller is used, configure:

- Baud rate: **115200**
- NMEA output: **ALL**
- Update rate: **5 Hz**

✔ **Important:** Ensure that the hydraulic threshold setup, and TCM calibrations on iGrade™ have been completed correctly. If not done this will directly impact the performance of the system and the implementation of your field designs. Make sure to carefully follow the instructions in the iGrade™ user's manual. Perform the figure 8 calibration to make sure that everything is running smoothly. If in doubt, consult your dealer.



Configuring Remote Control

iGrade™ controls hydraulic implement functions through **SCV1** and **SCV3**. To allow T3RRA software to control these functions, iGrade™ must be configured to accept remote control commands.

Configure the SCV control modes as follows:



Machine configuration	SCV1	SCV3
Single scraper (height only)	Remote Control	Not used
Dual scraper	Remote Control	Remote Control
Single scraper with cross-slope	Remote Control	Cross Slope Control

When using cross-slope control, ensure the **Cross Slope Setpoint Source** is configured as **Remote Control**.

Remote Control Main	
Status	Ok
Control Error (m)	0.00
Offset (m)	0.000
Command (m)	357.54
Set Offset - Zero Error	
Shift Offset Up	
Shift Offset Down	

To ensure hydraulic commands are accepted, the corresponding SCV levers in the machine cab must also be placed in the **Detent** position.

To make sure that the SCVs will receive the commands correctly also ensure that their switches in the cab are set to 'Detent'.

Connection Status

- ⚠

If iGrade™ does not receive remote control commands for approximately **5 seconds**, it will automatically disengage remote control and display "**No Remote Commands.**"

Under normal operation, T3RRA software continuously transmits remote control messages to maintain communication. If this message appears during operation, investigate the communication link between the tablet PC and the iGrade™ controller.



GNSS Connectivity

Although only **T3RRA Cutta** and **T3RRA Ditch** transmit remote control commands to iGrade™, all T3RRA software applications can receive GNSS position data.

T3RRA software may obtain GNSS data either from **John Deere iGrade™** or directly from another compatible GNSS receiver, depending on the system configuration.



Important

Before beginning an implementation operation, use **Zero Error** in iGrade™ to set the current blade height as zero. Whenever zero is reset within T3RRA software, the corresponding iGrade™ offsets should also be reset to ensure both systems remain synchronised.