CRG
Firmware Update Manual

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Release Notice

This is the July 2022 release of the Agra-GPS CRG Firmware Update Manual.

Disclaimer

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DO NOT USE THE "CRG" IF YOU DISAGREE WITH THE DISCLAIMER.

Introduction

The CRG houses different devices that may require firmware update (not including the optional internal cellular modem). These devices have separate firmware update file.

    (A)   CPU (Central Processing Unit)
- contains CRG Receiver and Bridge Control firmware

    (B)   Auxiliary Devices (Inertial Navigation System and Global Positioning System)

In addition, there may be additional files to update the ISObus virtual terminal (VT) applications (also known as ISO apps). Obtain the firmware update files directly from Agra-GPS.
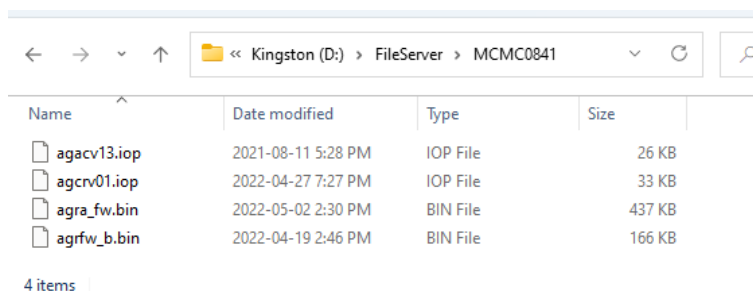
(A)   CPU Firmware Update

Step 1: Load the USB with Firmware

*NOTE: The 2600 display differs from the others in that firmware may only be loaded via the Compact Flash card accessed from the side (the USB port on the back is not usable for this purpose). Refer to page 6 for additional instructions for the 2600.

*NOTE: Storage devices must be formatted with the FAT32 file system (this is standard for new USB drives). Other formats such as NTFS or ext4 will not work.

First, the new firmware needs to be loaded onto a USB thumb drive with a specific file structure. Firmware must be placed inside of a folder titled "MCMC0841", and that folder must be inside of a folder titled "FileServer" (e.g. USB\FileServer\MCMC0841\). The result should look similar the following.
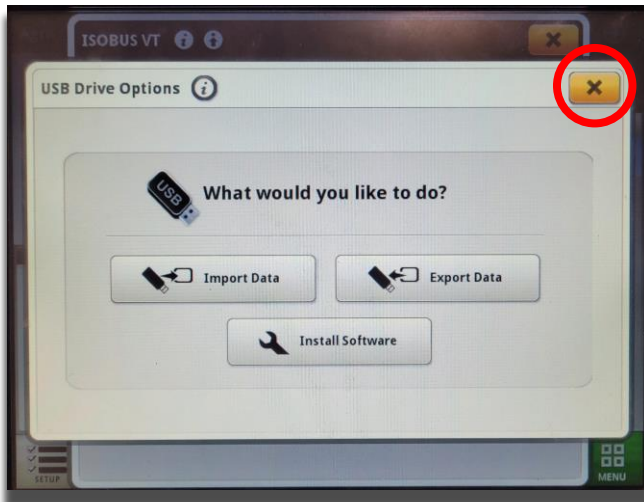

Note: Everything in the MCMC0841 folder will be transferred to the CRG. It is important that the MCMC0841 folder <u>only</u> contains the desired firmware and no other files. The *.bin files update the devices within the CRG, and the *.iop files are for updating the ISO apps. The primary firmware update file is "agra_fw.bin", and the auxiliary device files (which may or may not be supplied) may be found as "agrfw_b.bin" or "agrfw_c.bin".

The filenames must not be altered from those provided by Agra-GPS, in order for the CRG to accept the firmware properly (however upper/lower case doesn't matter).
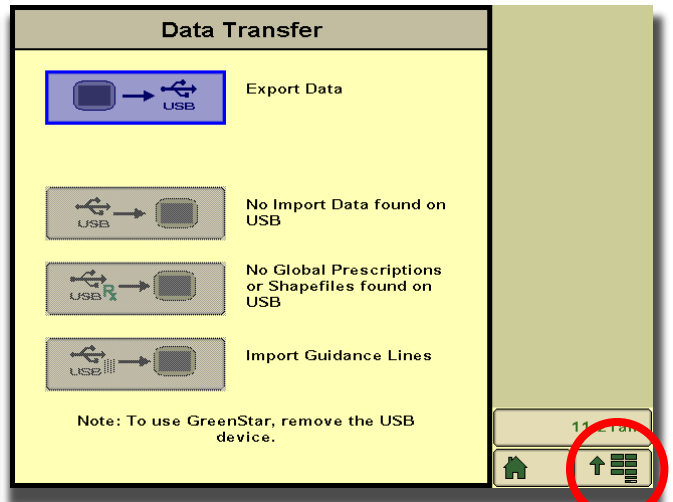
Step 2: Insert USB and Update Firmware

Insert the USB thumb drive into the John Deere monitor, then navigate to the CRG ISO app that will be loaded onto the John Deere monitor.

When the USB is first inserted into the monitor, a dialog box is presented asking for the next action. For the GreenStar 4 series, cancel this dialog by pressing the "X" and proceed to open the ISO app for the CRG Receiver. For previous GreenStar monitors, also ignore the Data Transfer options by simply accessing the main menu.
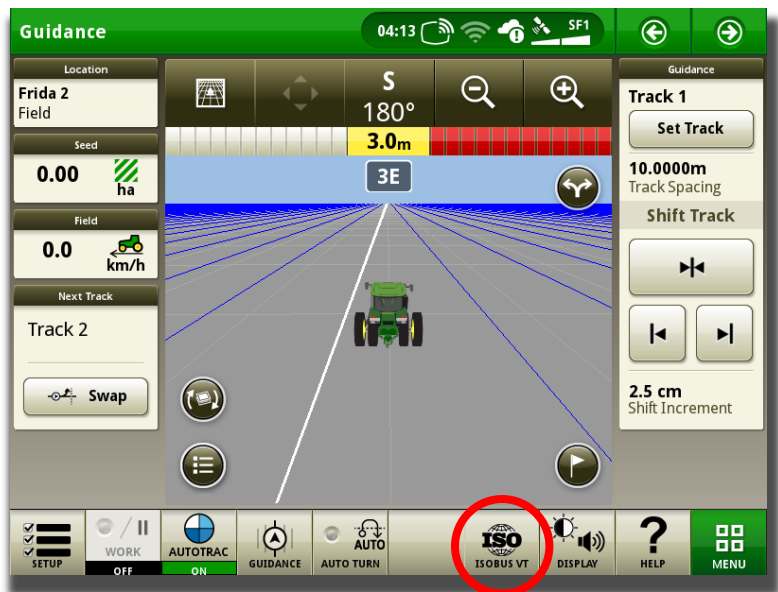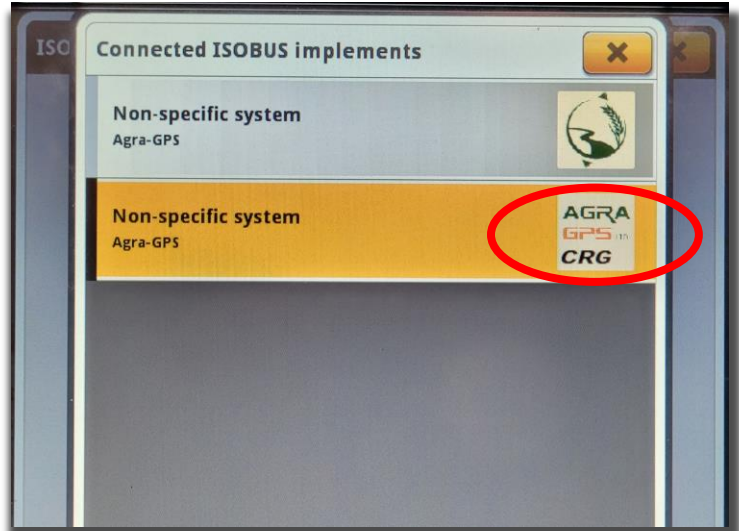

(4620/4640)   **(2630)**

In each case, the ISO app must be opened. The various John Deere GPS monitor models are shown as follows:

4640/4240

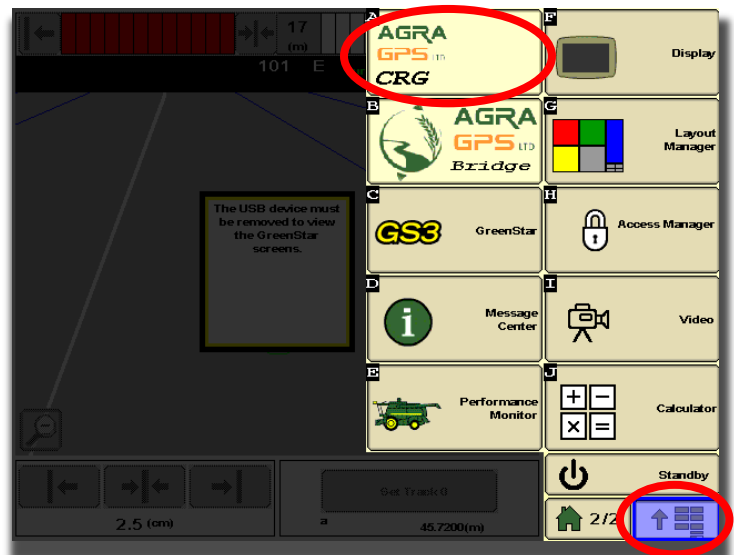Load the ISO app with the circled button.

Two different Agra-GPS ISO apps are installed. Choose the one that brings you to the CRG-Receiver app page (shown in yellow). The other is for the CRG-Bridge app, which is not used for the firmware update process.
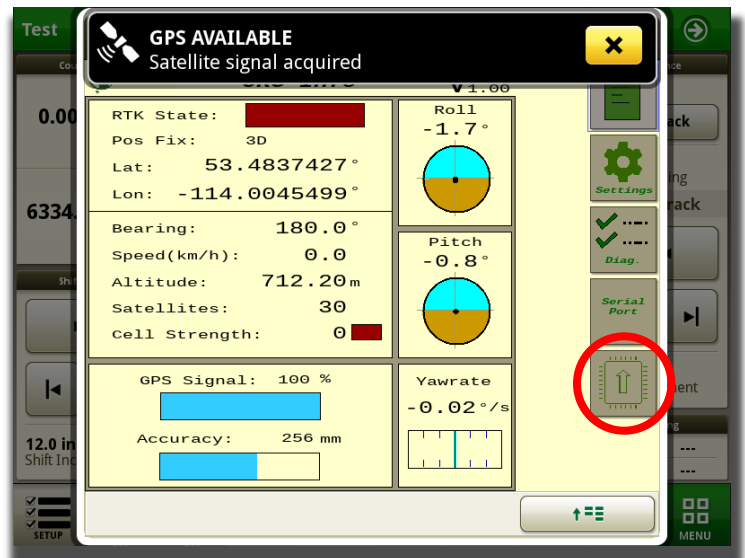
1800, 2600, & 2630
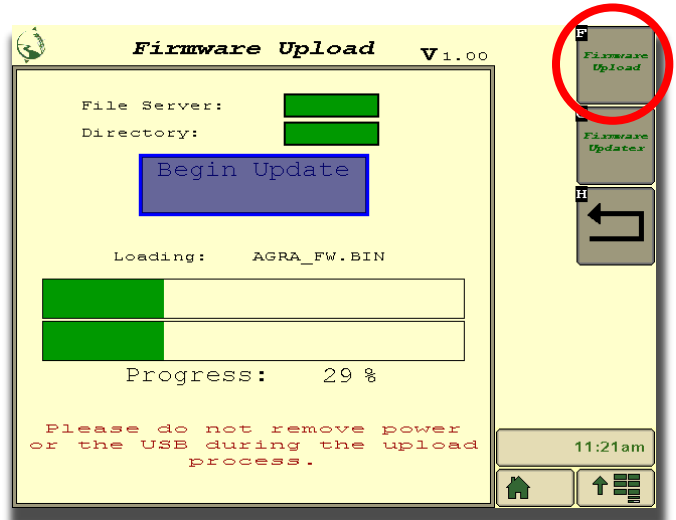
Load the ISO app with the circled button.

ISO App
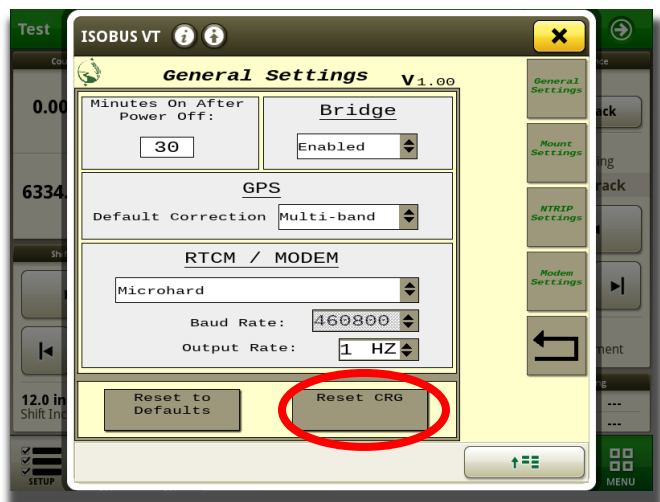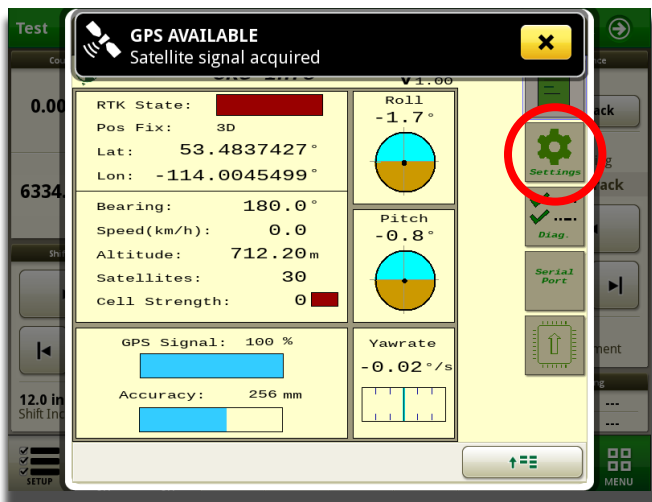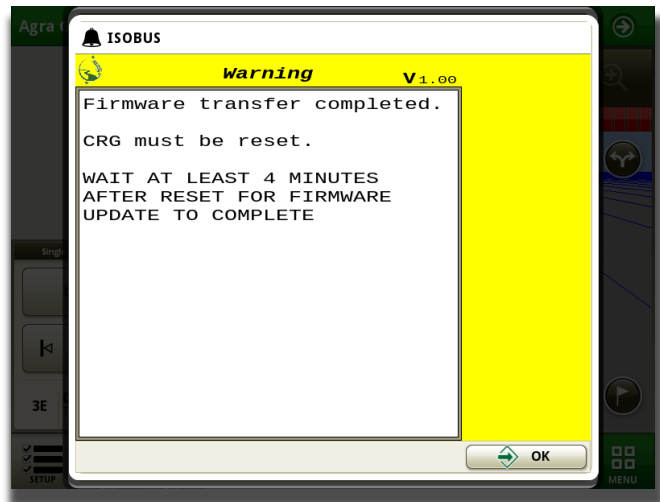
Open the Firmware Upload page.

Check that both the 'File Server' and 'Directory' indicators are green. The 'File Server' indicator shows that the John Deere file server is currently running on the CAN bus. The 'Directory' indicator shows that the Agra-GPS specific directory is found on the USB that was inserted.

If both indicators are green, then the CRG is ready to begin updating. Simply press the 'Begin Update' button and wait for the transfer to complete. <u>Do not power off or remove the USB during the update process.</u>

Firmware has been successfully transferred if the following message is shown →

NOTE: Once the transfer has completed the CRG requires a reset. This can be done by cycling power (key off, then key on), or by using the Reset CRG button. Go to the General Settings screen, and press the CRG Reset button, then press "Yes".

<div style="border: 2px solid red; padding: 1em;">

AFTER PRESSING "RESET CRG"

DO NOT TURN OFF POWER FOR 4 MINUTES!

DO NOT START THE MACHINE

WAIT AT LEAST 4 MINUTES AFTER CRG RESET BEFORE STARTING MACHINE

</div>

Troubleshooting

The 'File Server' indicator shows red: This means that the John Deere file server is not detected on the CAN bus. To make sure the JD file server is enabled navigate to the 'Multiple Monitor' section of the JD monitor and verify that the file server control function is enabled.

The 'Directory' indicator shows red: This means that the Agra-GPS manufacturer directory (MCMC0841) with firmware is not found. Verify that the file structure on the USB is correct and that the proper firmware is on the USB.

If everything is correct and the directory indicator remains red, try removing and reinserting the USB. If that does not work, try removing all files on the USB except for the \\FileServer\MCMC0841 folder. Ensure the USB device is formatted with FAT or FAT32. You might also try removing the plug from the monitor and plugging it back in to fully reboot the monitor.

If the firmware update stalls and the progress bar fails to move, there may be too much traffic on the ISObus. Ensure that no implements or other devices are connected to the implement bus.

After firmware file transfer is complete, the CRG is reset. The firmware update completes with the following LED color stages:

- Blue: Firmware integrity check
- Green: Create internal backup of existing firmware
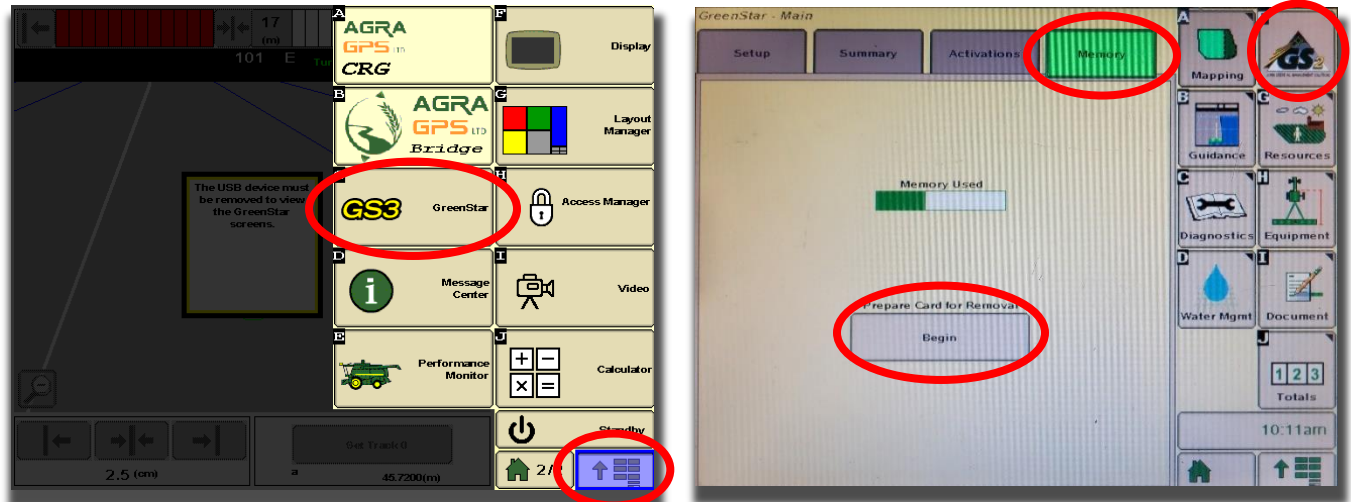- Red: Applying firmware update

If the firmware update process fails, the CRG will attempt to restore from its internal backup. Once it has restored the previous firmware, the transfer and update can be attempted again.

Known issue: if a .txt file is included in the firmware download folder, it will cause the CRG to lose its settings.

JD 2600 Monitor

The 2600 display differs from the others in that firmware may only be loaded via the Compact Flash (CF) card accessed from the side (the USB port on the back is not functional for this purpose). The CF card requires an external card access device to load firmware files onto it from your personal computer.

To remove the Compact Flash card, first you must safely shut it down. Do this via the following screens:

After pressing "Prepare Card for Removal", the 2600 must first save data to the CF card. This may take 30 seconds or more to complete. Do not remove the card until the message appears: "Compact Flash Eject OK".

After re-inserting the CF card, the "Begin Update" button has to be pressed twice.

(B)   Auxiliary Firmware Update

If auxiliary firmware files "agrfw_b.bin" or "agrfw_c.bin" were loaded in step A, an additional step is required to update the CRG's auxiliary devices.   After completing the initial Firmware Upload step, you can proceed to the "Firmware Updater" page. If there are update file(s) present, the "Firmware" indicator will be green. Press the begin update button to begin the update process, and ensure power remains while the update process takes place.

When complete, the Firmware indicator will turn red to show that the firmware has been successfully applied and the temporary firmware file previously transferred has been removed.