

LIBREPLANET 2023
CHARTING THE COURSE



The State of Free Software in Agriculture

SICK.CODES

Disclaimer

- I authorize FSF to distribute, reproduce, publicly display, and
- prepare derivative works of the Recording and any derivative works of
- the Recording (the "Licensed Materials") under the terms of the
- Creative Commons Attribution 4.0 International (CC BY)

Content

- An opinion at the time of writing.
- Does not represent future or past opinion, of anyone else.
- All trademarks, logos and brand names are the property of their respective owners.
- No endorsements, affiliation.

Where to find me

- <https://sick.codes>
- GitHub: <https://github.com/sickcodes>
- Twitter: <https://twitter.com/sickcodes>
- LinkedIn:
<https://www.linkedin.com/in/sickcodes/>
- Mastodon: <https://sick.social/>



<https://www.reuters.com/world/europe/tractors-descend-brussels-farmer-protest-over-plans-limit-nitrogen-emissions-2023-03-03/>





Europe



2 minute read · March 3, 2023 4:22 PM UTC · Last Updated 4 days ago



Tractors roll into Brussels in farmer protest over plans to limit nitrogen emissions

By Bart Biesemans and Clement Rossignol

BRUSSELS March 3 (Reuters) - Farmers from Belgium's northern region of Flanders drove thousands of tractors into Brussels on Friday in a protest against a new regional government plan to limit nitrogen emissions.

Police estimated the number of tractors clogging the streets of Brussels at 2,700. Many were decorated with big signs reflecting the farmers' anger.

"Proud to be a farmer," read one.

Is this talk relevant to me?

Is this talk relevant to me?

- Is your food farmed using Free Software?

Is this talk relevant to me?

- Is your food farmed using Free Software?
- Do you have the freedom to choose between food farmed using free software, and non-free software?

Is this talk relevant to me?

- Is your food farmed using Free Software?
- Do you have the freedom to choose between food farmed using free software, and non-free software?
- Does it even matter?



FOOD, INC.

A ROBERT KENNER FILM

Ag is complex

- Necessary to survive

Ag is complex

- Necessary to survive
- Decentralized

Ag is complex

- Necessary to survive
- Decentralized
- Brick & mortar

Ag is complex

- Necessary to survive
- Decentralized
- Brick-and-mortar
- One of the oldest professions...

Arable Land

Rank	Country	Cultivated land (km ²)	Cultivated land (%)	Arable land (km ²)	Arable land (%)
—	World	17,235,800	11.6	15,827,534	10.7
1	India	1,765,260	53.7	1,656,780	50.4
2	United States	1,681,826	17.1	1,691,488	17.2
3	Russia	1,265,267	7.4	1,248,169	7.3
4	China	1,238,013	12.9	1,084,461	11.3
5	Brazil	800,485	9.4	570,572	6.7
6	Canada	519,205	5.2	429,355	4.3
7	Australia	487,695	6.3	307,520	4.0
8	Indonesia	478,055	25.1	247,598	13
9	Nigeria	412,938	44.7	354,726	37.3
10	Argentina	397,598	14.3	328,087	13.9
11	Ukraine	347,673	57.6	342,901	56.1
12	Sudan	296,289	15.9	204,710	11.0
13	Mexico	259,301	13.2	202,229	11.8

https://en.wikipedia.org/wiki/Land_use_statistics_by_country

Outliers

- Not all cultivated land is arable
- Not all arable land is cultivated



https://upload.wikimedia.org/wikipedia/commons/1/1e/KV_Tractor_Show_2006_Farmall_Road_Grader_Conversion_-_Flickr_-_Corvair_Owner.jpg

Zero software



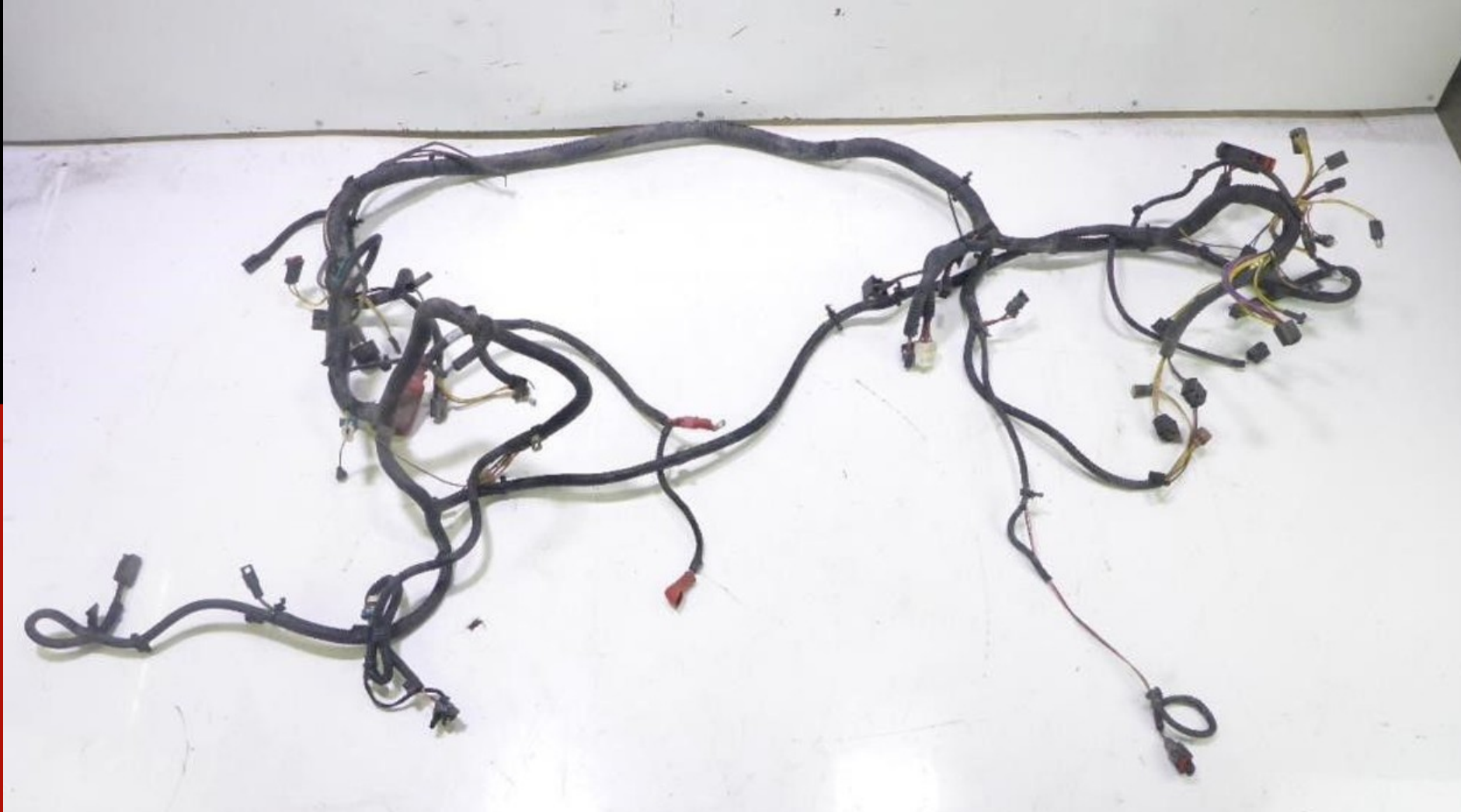


Complexity

- <1950 wiring loom

<https://vintagetractorspareparts.co.uk/products/wiring-loom-up-to-1952>





<https://suncoastcyclesports.com/09-john-deere-gator-855-diesel-xuv-main-cable-wiring-wire-harness-loom-am140217/>

Catalogue

- Sensors
- Telematics
- Automatic steering
- Photography
- Networking/Communication

Worked example

- **John Deere in depth, and then others**

Example

<https://www.deere.com/en/tractors/4wd-track-tractors/9r-640/>



Here for you. Here for your machine.

Connected Support

Your 9R Series tractor comes with a JDLink™1 connection and, once activated, your John Deere dealer can offer Connected Support services. With your permission, your dealer can “dial in” to your tractor’s diagnostic data and assess trouble codes to help you avoid downtime.

Service Advisor™ Remote

Allows your dealer to remotely analyse Diagnostic Trouble Codes in near real time so technicians arrive on-site with the right parts and the right tools to quickly repair your tractor.

Expert Alerts

An industry exclusive, Expert Alerts is a proactive monitoring system that notifies dealers of potential tractor issues. This allows technicians to remotely diagnose issues and fix them before they become a problem.

Remote Display Access

Lets your dealer remotely and quickly assist you with in-cab display setup and adjustments for optimal tractor performance.

Learn more at [JohnDeere.com.au/ConnectedSupport](https://www.johndeere.com.au/ConnectedSupport) or [JohnDeere.co.nz/ConnectedSupport](https://www.johndeere.co.nz/ConnectedSupport)

“Cloud” based farming

- Remote Support
- Remote Access
- Analytics
- Alerts
- Warranty

Dial in

Connected Support

Your 9R Series tractor comes with a JDLink™¹ connection and, once activated, your John Deere dealer can offer Connected Support services. With your permission, your dealer can “dial in” to your tractor’s diagnostic data and assess trouble codes to help you avoid downtime.

Service Advisor™ Remote

You can farm without telematics

- Opt-in features
- "Value-add"

Trouble Codes

Service Advisor™ Remote

Allows your dealer to remotely analyse Diagnostic Trouble Codes in near real time so technicians arrive on-site with the right parts and the right tools to quickly repair your tractor.

Trouble Codes

Service Advisor™ Remote

Allows your dealer to remotely analyse Diagnostic Trouble Codes in near real time so technicians arrive on-site with the right parts and the right tools to quickly repair your tractor.

Solved



JOHN DEERE

[Home](#)

[Equipment](#)

[Finance](#)

[Parts & Service](#)

[Digital](#)

[Home](#) > [Manuals And Training](#) > [Customer Service Advisor](#)

Customer Service ADVISOR™

John Deere Customer Service ADVISOR is a digital database of operator and technical manuals. There are multiple ways to access this tool. Users with this license can access this information online or leverage a downloaded application and cable to connect directly to equipment for diagnostics.




This tool is available for purchase from your local John Deere dealer and [Shop.Deere.com](#).

[See Your Dealer for Details](#)


[Shop.Deere.com](#)




Huge


 **JOHN DEERE** | Shop  Cart  Sign In

Home Parts Merchandise Workshop


Select Equipment To find parts that fit + All Product name, part number or keyword  Select a Dealer For price and availability +


[Home](#) > [Merchandise & Workshop](#) > Customer Service Advisor

 **Limited Time Offer: Enjoy Free Shipping* with Orders of \$50 or More!**


Categories Sort by: **Most Relevant** 

John Deere products (11)
 Merchandise & Workshop (11)


 Find Parts that fit your Equipment Select Equipment



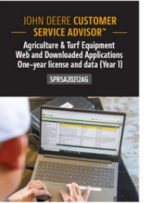
Turf Equipment Connection Tool
Part Number: SPRSA1010



V3 Basic Machine Interface Kit
Part Number: SPRSA5023



V3 Bluetooth Machine Interface Kit
Part Number: SPRSA5024



John Deere Customer Service ADVISOR™ Agriculture & Turf Equipment Web and Downloaded Applications One-year license and data (Year 1)
Part Number: SPRSA20212AG

Huge

- Turf Equipment Connection Tool



MOU result

<https://shop.deere.com/us/product/v3-Basic-Machine-Interface-Kit/p/SPRSA5023>



“Utilizing the extensive capabilities of Customer Service ADVISOR requires training by the customer’s dealer, but having access to new insights and the ability to complete more advanced repairs themselves, gives customers more flexibility to complete them on their own time and allows for a better understanding of their equipment,” Caldwell said.

In 2023, John Deere will roll out an enhanced customer solution that includes a mobile device interface, and the ability to download secure software updates directly to embedded controllers on select John Deere equipment with 4G MTG connections.

The availability of the Customer Service ADVISOR™ tool for customers reinforces Deere’s commitment to customer uptime and repairability.

Alerts

Expert Alerts

An industry exclusive, Expert Alerts is a proactive monitoring system that notifies dealers of potential tractor issues. This allows technicians to remotely diagnose issues and fix them before they become a problem.

Alerts/Surveillance

- Paying Deere technician or dealer, to study your output, and charges the user, can be a fair deal.

Remote access

Remote Display Access

Lets your dealer remotely and quickly assist you with in-cab display setup and adjustments for optimal tractor performance.

Learn more at JohnDeere.com.au/ConnectedSupport or JohnDeere.co.nz/ConnectedSupport

But

- Can you choose the remote access software?

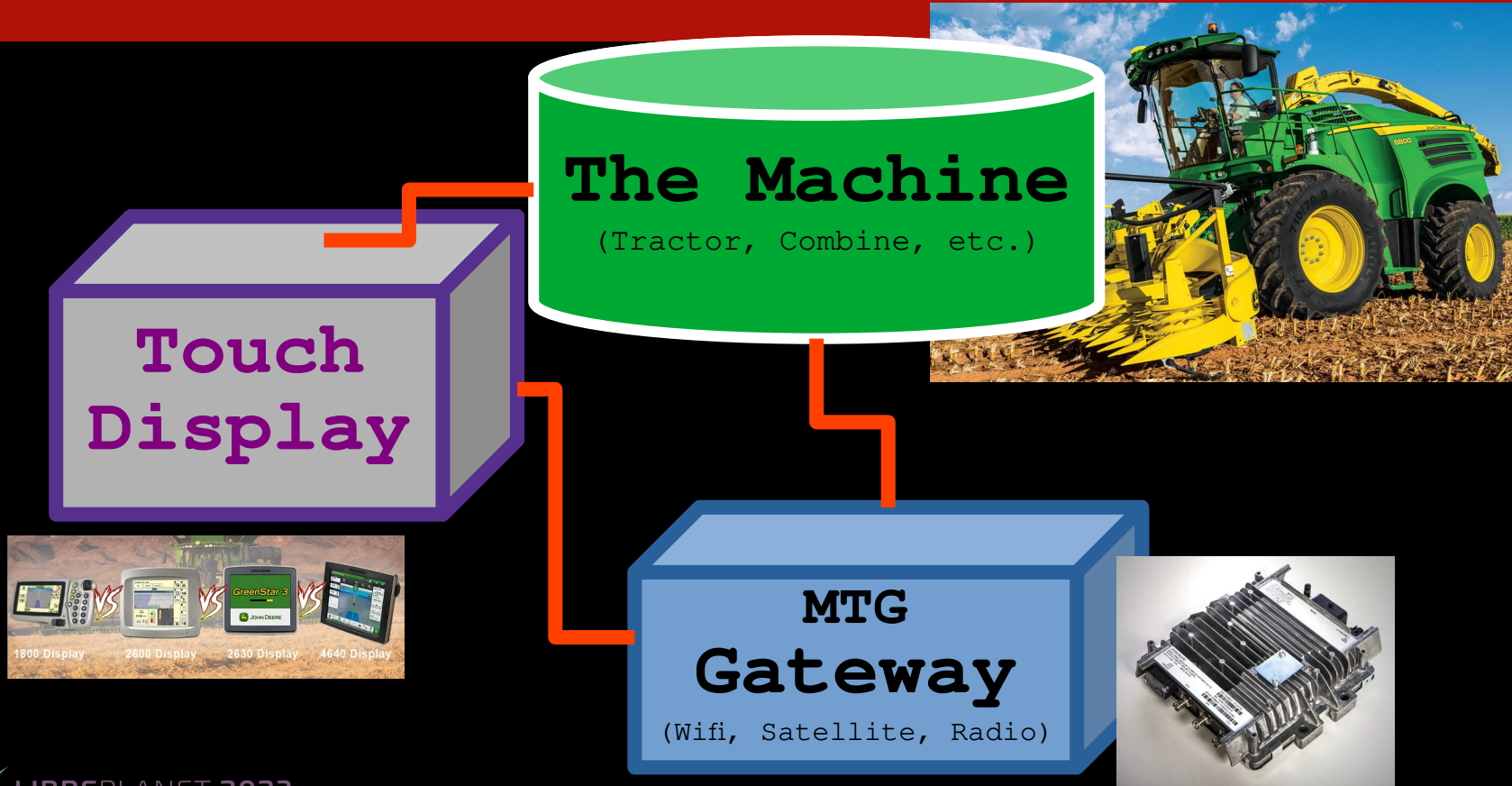
But

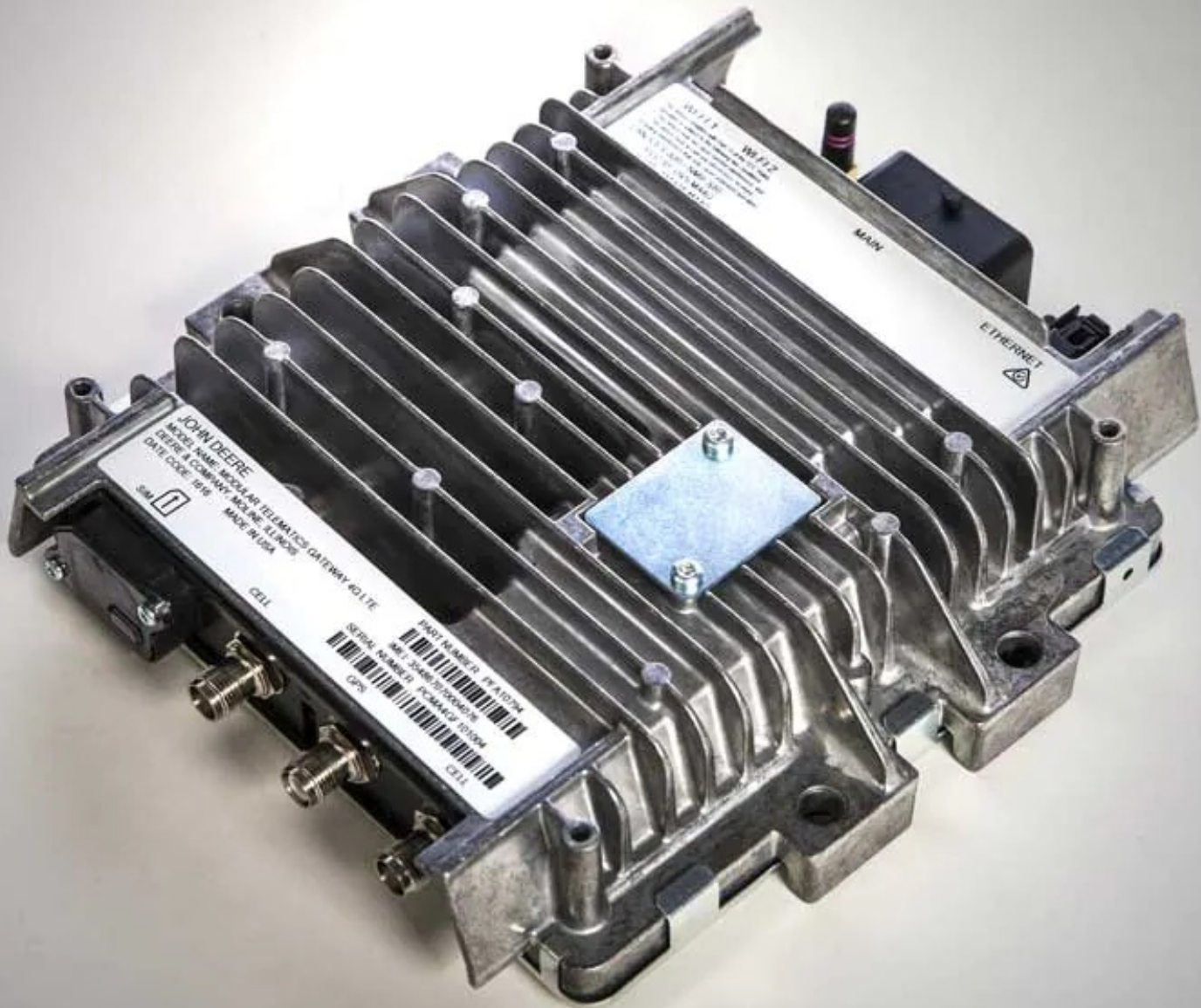
- Can you choose the remote access software?
- Can I locate a stolen device?

But

- Can you choose the remote access software?
- Can I locate a stolen device?
- Can I repair my own tractor?

JDLink





Display



JOHN DEERE

Guidance

08:57



SF3

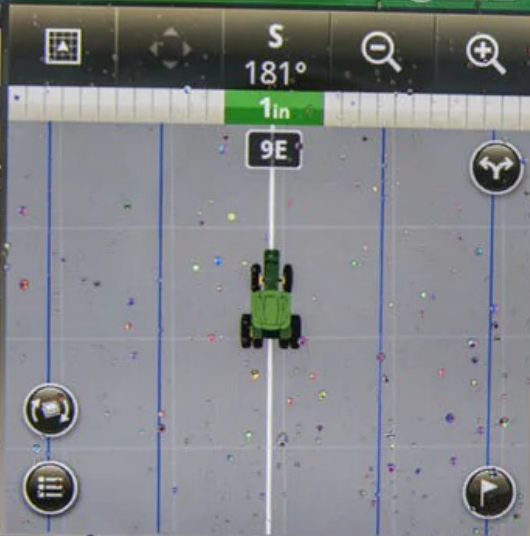


Location
North 75
Field

Counters A
0.46 ac

Counters A
0.46 ac

Next Track
Trac 1
Swap



Guidance
Track 1
See Track
Track Spacing
Shift Track
6.0 in
Shift Increment

Navigation bar with icons for: SETUP, WORK, AUTOTRAC ON, GUIDANCE, QUICK LINE, SWAP TRACK, ISOBEET VT, DISPLAY, HELP, MENU.

JOHN DEERE

Ams 05:10

Location

- A Client
- Farm
- Ok Field

AutoTrac

Guidance Off

Counters A

446,43 ha

Guidance

Set Track

Track Spacing

Shift Track

Guidance Off

Counters A

→ 0

20-10-2020

WORK OFF

AUTOTRAC OFF

GUIDANCE

ISOBUS VT

DISPLAY

BOUNDARY

MENU



What software does it run?

What software does it run?

- GNU/Linux
 - Wind River Linux

Wind River

<https://www.youtube.com/watch?v=pK4eyfAtjWs>



Wind River Linux - Linux You Can Trust



Wind River
2.74K subscribers

Subscribe

👍 15 | 🗨️

➦ Share

☰ Save

3,813 views Jul 1, 2016

Wind River understands the appeal but also the pain-points of enabling open source software for your devices are here to help.





OPEN SOURCE

Exit full screen (f)



Wind River Linux - Linux You Can Trust

OPEN SOURCE

Exit full screen (f)

Wind River, Free Software?

GPL-2.0

WindRiver-Labs / wrlinux-x Public archive

Notifications

Fork 66

Star 156

[Code](#) [Issues 15](#) [Pull requests](#) [Actions](#) [Projects](#) [Security](#) [Insights](#)

WRLINUX_10_21...

76 branches 69 tags

Go to file

Code

About

setup tool for Wind River Linux (10.x) - start **HERE!**



robertlinux setup.sh: Support scp-like syntax as git

1bccf88 on May 18, 2022 1,295 commits

bin	Fix machine validation when using local layer	last year
data	oe-core-dl-3-3.xml: Add anongit.freedesktop.org.git.virglren...	10 months ago
.gitignore	Add .gitignore	6 years ago
EULA	EULA: update words and year	3 years ago
LICENSE	LICENSE: Add GPLv2 license and update files per copyright n...	7 years ago
README.md	README.md: master-wr -> WRLINUX_10_21_BASE	2 years ago
setup.sh	setup.sh: Support scp-like syntax as git	10 months ago

Readme

GPL-2.0 license

156 stars

27 watching

66 forks

Releases

69 tags

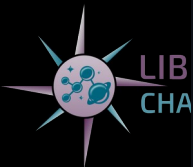
License

Copyright (C) 2016-2017 Wind River Systems, Inc.

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 as published by the Free Software Foundation.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA



Open Source Artifacts and Product Information

Export to PDF

More

Updated March 03, 2023

Wind River Linux, Wind River Linux LTS 19, Getting Started, Getting Started, External, Document

Display Other Resources

You may obtain additional product information related to Open Source compliance and security through Wind River Customer Support.

To help discern legal requirements and potential security risks associated with the product, Wind River makes the following content available with each release. Once it is part of your *Wind River License Agreement*, this content is added as part of a new product installation or existing product update as a Git repository.

Open Source Software Compliance Artifacts

This includes the following content:

- *Wind River Linux LTS 19 Package Licenses*
- *Wind River Linux LTS 19 Third Party Notices*
- *Wind River Linux LTS 19 Open Source Disclosure*
- *Wind River Linux LTS 19 SPDX (Software Package Data Exchange) information*

`https://docs.windriver.com/bundle/Wind_River_Linux_Getting_Started_LTS_19/page/jcr1604596218781.html`

Intellectual Property and Licensing Considerations

[Export to PDF](#)[More](#)

Updated January 27, 2021

[Wind River Linux](#), [Wind River Linux 8](#), [Toolchain & Build System](#), [Toolchain & Build System](#), [External](#), [Document](#)

[☰ Display Other Resources](#)

Disclosing intellectual property (IP) is a legal requirement determined by customer organizational requirements.

Wind River provides binary updates as part of the managed build process. Because the contents of a binary are not visible, this makes the source code for and licensing information seem invisible.

To overcome this perception, Wind River also makes the source available as part of the build process, and also distributes the source alongside the binary. Any verification required by the end user's legal requirements is determined by their company policies.

Parent topic: [On-Target Binary Updates](#)

visible, this makes the source code for and licensing information seem invisible.

To overcome this perception, Wind River also makes the source available as part of the build process, and also distributes the source alongside the binary. Any verification required by the end user's legal requirements is determined by their company policies.

Parent topic: [On-Target Binary Updates](#)

- **Wind River provides source**
- **Non-free optional packages**

Off to a good start...

- Let's use Deere as an example

Will a tractor run without software?



Bru 🚜

@FarmKid01

Anyone else have this problem?! Super annoying when trying to plant!! Have to stop, shut down and restart everything. Any suggestions on how to fix? Or the possible problem causing it? #AgTwitter #JohnDeere @JohnDeere

2:32 PM · May 2, 2020

Will a tractor run without software?



Communication Error

Communication with an application's electronic control unit has been unexpectedly lost. If reprogramming is not in process, check the harness connections - disconnect and reconnect the controller. If the problem persists, consult the dealer for this controller. The controller can be identified by the following manufacturer information:

Manufacturer Code: John Deere

Industry Group: Agricultural and Forestry Equipment

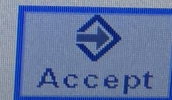
Vehicle System: Planters/ Seeders

Function: Seed Rate Control

ISOBUS Identity #: 19416

ISOBUS NAME: A008800104204BD8

Source Address: 0xc0



Communication Error

Communication with an application's electronic control unit has been unexpectedly lost. If reprogramming is not in process, check the harness connections - disconnect and reconnect the controller. If the problem persists, consult the dealer for this controller. The controller can be identified by the following manufacturer information:

Translation

- Consult the dealer for information

Why do I need a dealer?

- Health & Safety
- Law
- Warranty
- Paying customer

Dealer has significant role

- Do farmers own their tractor, or are they simply leasing them?

Cost

AUTO TRAC PRICES

updated 7/26/17

GS3 AUTOTRAC PRICES

SF1 HAS 9" ACCURACY	
SF1 WITH GS 3 2630	PRICE
AUTOTRAC ACTIVATION	\$ 3,500.00
GS3 DISPLAY	\$ 5,895.00
SF1 SF6000 RECEIVER	\$ 3,895.00
TOTAL	\$ 13,290.00

USED AUTOTRAC PRICES

SF1 WITH GS2 2600	
	PRICE
AUTOTRAC ACTIVATION	\$ 3,500.00
USED GS2 DISPLAY	\$ 1,500.00
USED SF1 SF3000 RECEIVER	\$ 2,500.00
TOTAL	\$ 7,500.00

Gen IV Display Prices

Gen IV 4600 Activations

AutoTrac Activation	\$ 1,000.00
Premium Activation (AT, Swath, Doc)	\$ 3,000.00

SF3 HAS 1.2" ACCURACY	
GS3 2630 SF3 KIT	PRICE
AUTOTRAC ACTIVATION	\$ 3,500.00
GS3 DISPLAY	\$ 5,895.00
SF3 SF6000 RECEIVER	\$ 7,895.00
TOTAL	\$ 17,290.00

RTK HAS SUB INCH ACCURACY	
GS 3 2630 RTK KIT	PRICE
AUTOTRAC ACTIVATION	\$ 3,500.00
GS3 DISPLAY	\$ 5,895.00
SF3 SF6000 RECEIVER	\$ 7,895.00
RTK ACTIVATION	\$ 3,500.00
RTK RADIO BUNDLE	\$ 1,795.00
TOTAL	\$ 22,585.00

***RTK Subscription is Required see an AMS Specialist for Details**

***For RTK Other Hardware is Required see an AMS Specialist for Details**

Have A Farm Plan Account??? Check Out Their Special Financing Options for AMS Equipment

Gen IV 4640 Prices

4640 Universal Display	\$	3,995.00
1 Yr AutoTrac Subscription	\$	850.00
1 Yr Precision Ag Core Subscription (AT, Swath, Doc)	\$	1,700.00
5 Yr AutoTrac Subscription	\$	4,000.00
5 Yr Precision Ag Core Subscription (AT, Swath, Doc)	\$	8,000.00

Other Items and Upgrades to GS2 and GS3 Equipment

GS2 Upgrades	PRICE
SWATH CONTROL PRO	\$ 3,000.00
AUTOTRAC ACTIVATION	\$ 3,500.00
ROWSENSE ACTIVATION	\$ 3,000.00
RTK ACTIVATION	\$ 3,500.00

GS3 Upgrades	PRICE
Machine Sync Activation	\$ 1,500.00
SWATH PRO ACTIVATION	\$ 3,000.00
AUTOTRAC ACTIVATION	\$ 3,500.00
AUTOTRAC ROWSENSE	\$ 3,000.00
RTK ACTIVATION	\$ 3,500.00
SURFACE WATER PRO	\$ 2,995.00
SURFACE WATER PRO +	\$ 3,245.00
ITEC PRO ACTIVATION	\$ 2,500.00
GS2 TO GS3 ACTIVATION	\$ 350.00

Misc	PRICE
RATE CONTROLLER 2000	\$ 2,350.00
ATU 200	\$ 1,395.00
SF1 TO SF2 RECEIVER UPGR	\$ 4,000.00
RTK RADIO BUNDLE	\$ 1,795.00
ROWSENSE FEELERS	\$ 1,023.00



Dealer sales example

Gen IV 4640 Prices

4640 Universal Display	\$	3,995.00
1 Yr AutoTrac Subscription	\$	850.00
1 Yr Precision Ag Core Subscription (AT, Swath, Doc)	\$	1,700.00
5 Yr AutoTrac Subscription	\$	4,000.00
5 Yr Precision Ag Core Subscription (AT, Swath, Doc)	\$	8,000.00

Other Dealer "features?"

 SIGN IN / UP

The  Register®




PERSONAL TECH

John Deere tractors 'bricked' after Russia steals machinery from Ukraine

129 

If true, a good use for DRM?

 [Thomas Claburn](#)

Mon 2 May 2022 // 20:29 UTC



Millions of dollars worth of John Deere agricultural machinery stolen from a dealership in Ukraine by Russian Federation forces has been traced to the Chechen Republic and bricked, it is reported.

In this instance, the Moline, Illinois-based Deere & Co.'s [penchant](#) for proprietary digital access controls may have worked out well from a public-relations standpoint, if the account is true. The looted tractors and combine harvesters have been remotely disabled, according to an unidentified Ukrainian [interviewed by CNN](#), leaving those responsible looking for ways to bypass the machinery's digital locks.

That task may be all the more challenging given the reported [flight of IT talent](#) from Russia and the sanctions-induced shortage of IT equipment in the country.

Remote disablement?



CNN

World

Africa

Americas

Asia

Australia

China

More

(CNN) — Russian troops in the occupied city of Melitopol have stolen all the equipment from a farm equipment dealership – and shipped it to Chechnya, according to a Ukrainian businessman in the area.

But after a journey of more than 700 miles, the thieves were unable to use any of the equipment – because it had been **locked** **remotely**.

Little details on remote brick

- I asked JD, too.

Little details on remote brick

- I asked JD, too.
- Can I try to unbrick one?

No need to report mine stolen

No need to report mine stolen

- I bricked mine anyway

JOHN DEERE

SR INSTALLATION of PCGUMUA0052B - 1.1

English: Your system has entered System Recovery. Please contact your John Deere Dealer to attempt data recovery and software reinstallation. Dealers please refer to latest machine or display technical manual for more information.

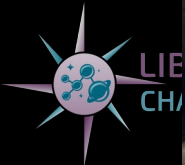
Español: Su sistema ha entrado en modo de Recuperación. Por favor comuníquese con el concesionario John Deere para intentar la recuperación de datos y la reinstalación del software. Los concesionarios deben consultar el manual técnico más reciente de la máquina o de la pantalla.

Français: Votre système a démarré une récupération du système. Veuillez contacter votre concessionnaire John Deere pour tenter une récupération de données et une réinstallation du logiciel. Concessionnaires : veuillez vous reporter au manuel technique le plus récent de la machine ou de la console pour plus d'informations.

Deutsch: Ihr System befindet sich in Systemwiederherstellungsmodus. Bitte wenden Sie sich an Ihren John Deere-Händler, um eine Datenwiederherstellung und Neuinstallation der Software zu versuchen. Händler sollten das neueste technische Handbuch der Maschine oder des Displays heranziehen, um weitere Informationen zu erhalten.

Português: Seu sistema iniciou a Recuperação do Sistema. Entre em contato com o seu distribuidor John Deere para tentar efetuar a recuperação dos dados e a reinstalação do software. Distribuidor, consulte o manual técnico do monitor ou da máquina mais recente para obter mais informações.

Italiano: Il sistema in uso è entrato in fase Recupero sistema. Rivolgersi al concessionario John Deere di zona per procedere al recupero dei dati ed alla reinstallazione del software. Per ulteriori informazioni i concessionari possono consultare il manuale tecnico della macchina o del display più recente.



LIE
CH

Put hacker hat on

- I bricked mine anyway

Good starting position: FCC

FCC ID.io

Blog

Search

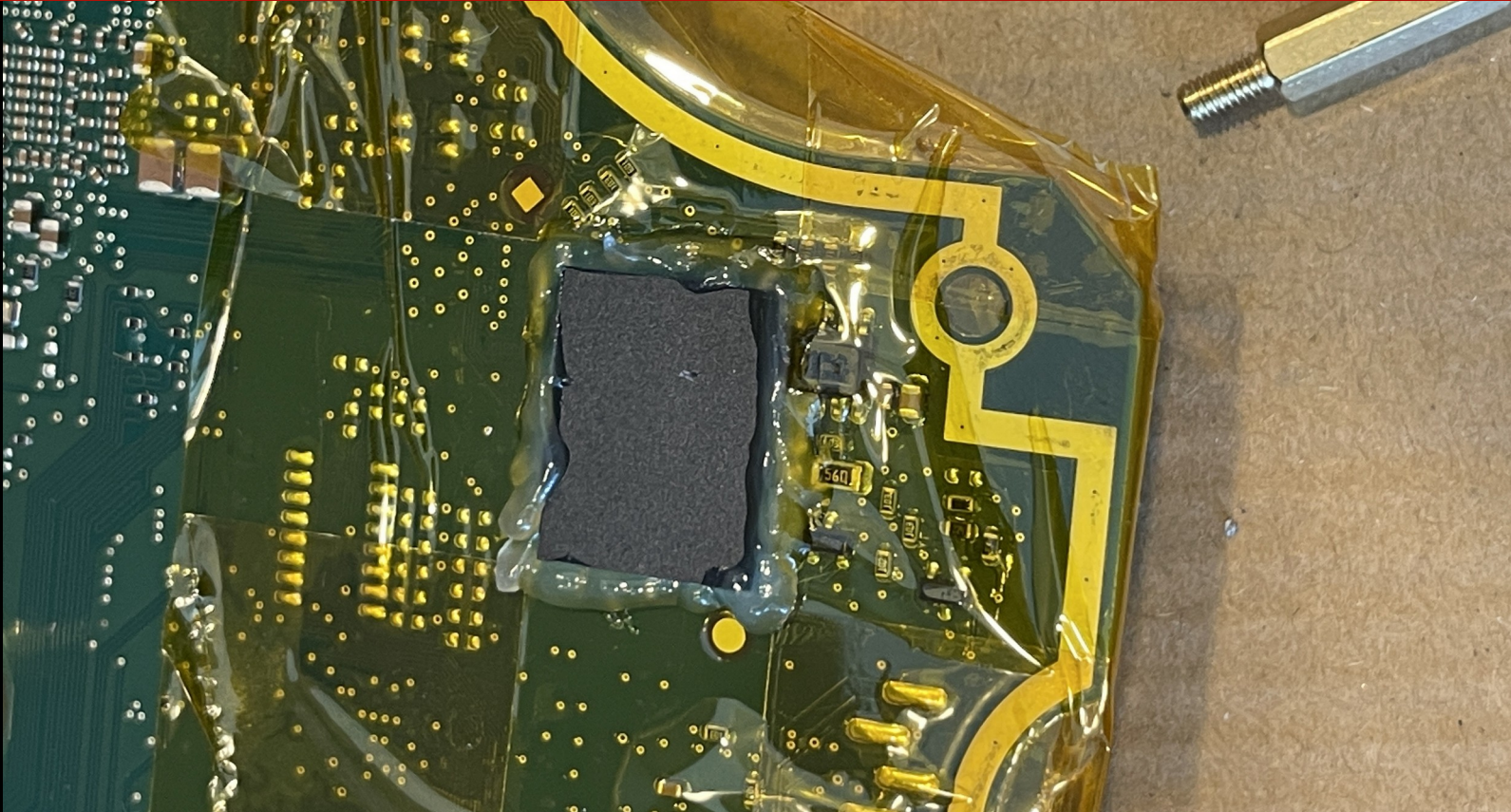
MA4G Modular Telematics Gateway 4G
LTE External Photos MTG 4G LTE picturesx
Deere & dba John Deere Intelligent
Solutions Group

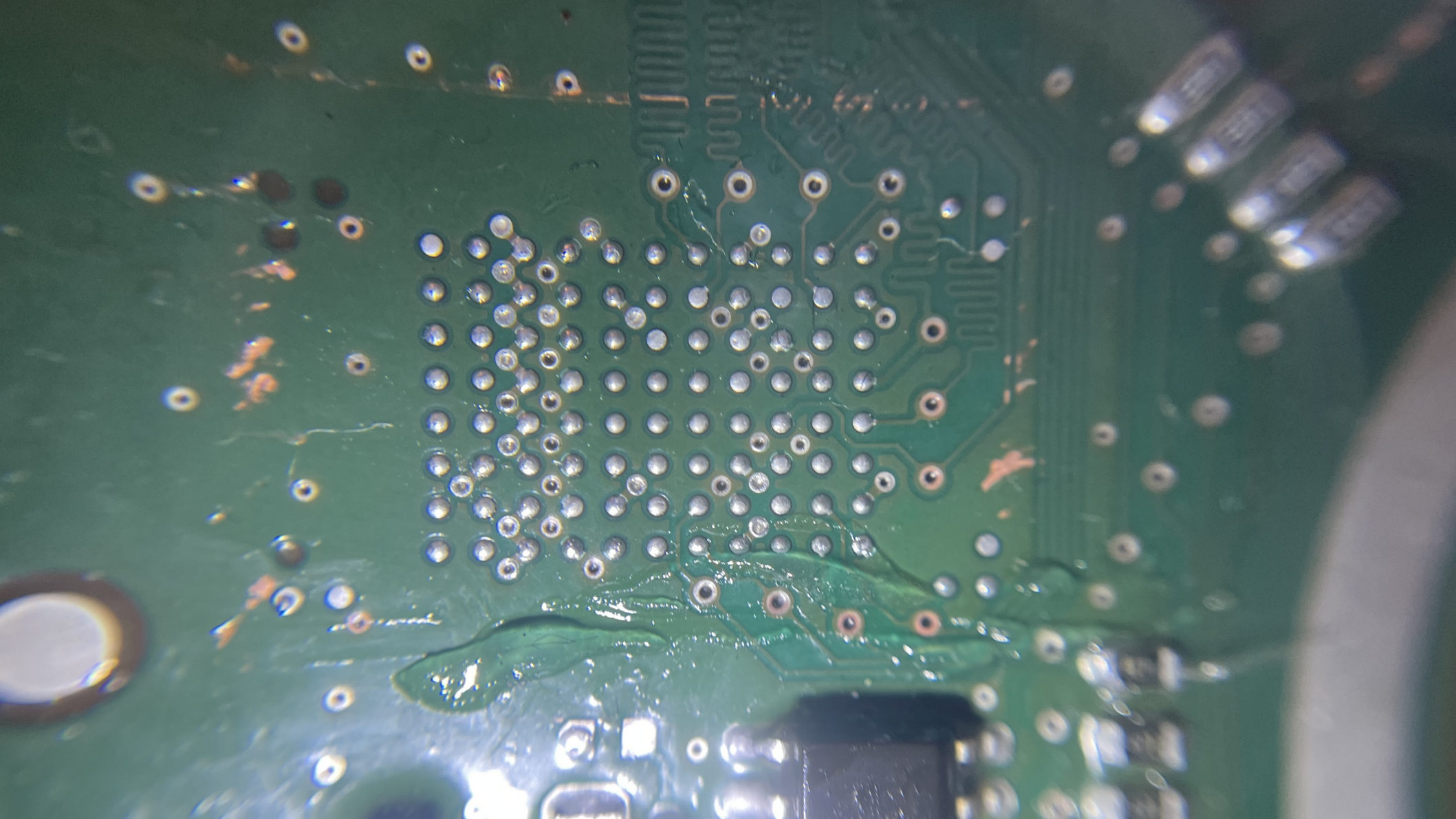
Deere & dba John Deere Intelligent Solutions Group Modular Telematics
Gateway 4G LTE

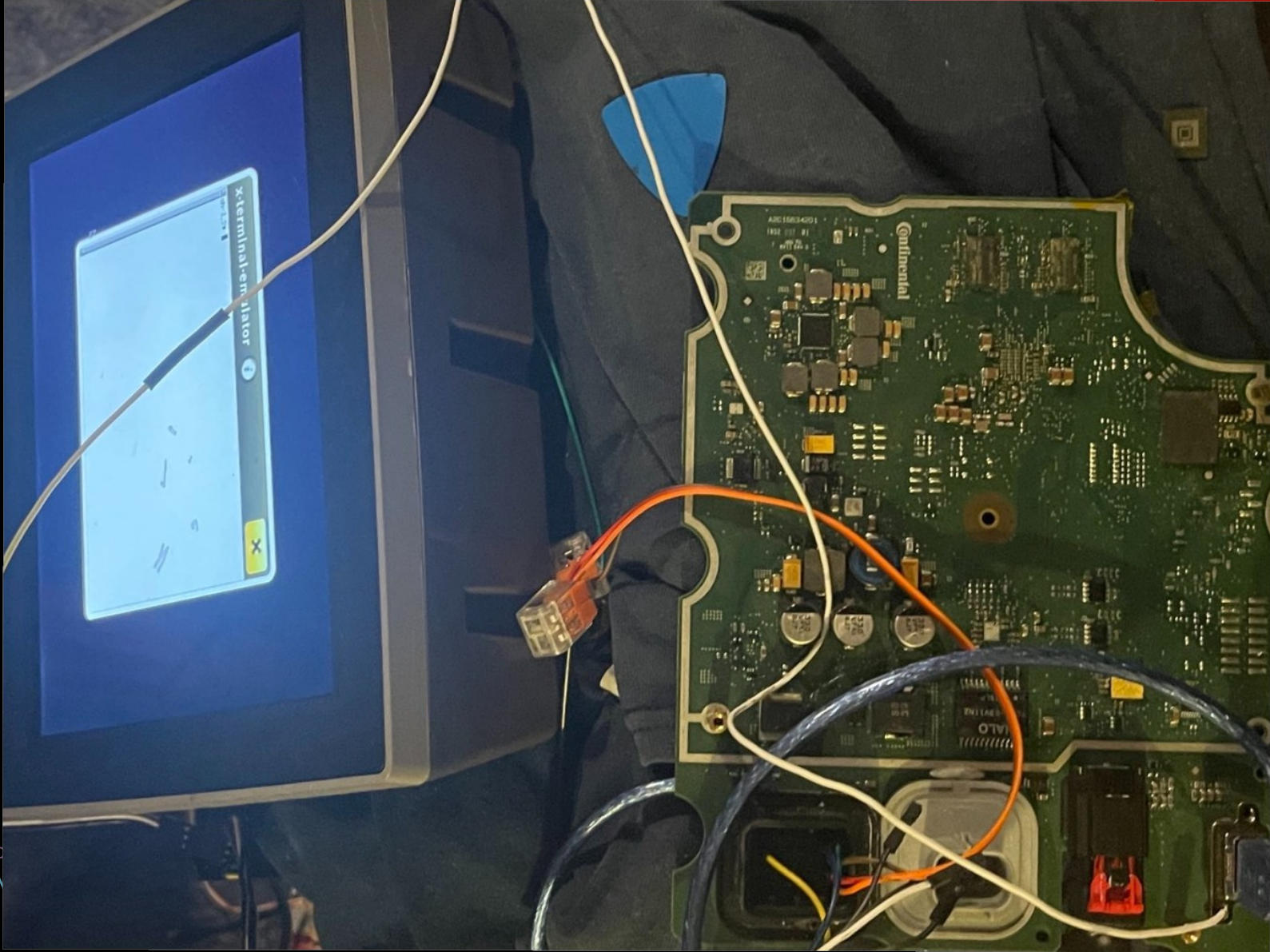
FCC ID› / Deere & Company dba John Deere Intelligent Solutions Group› / MA4G›

<https://fccid.io/OV5-MA4G/External-Photos/External-Photos-3046914>

Having a look







PIN lock codes

Database Structure Browse Data Edit Pragmas

Table: **AccessControlUsers**


ID	Name	AccessGroupID	Pin	Deletable	DateModified
...	Filter	Filter	Filter	Filter	Filter
1	Administrator	1	11111	0	NULL
2	Operator	2	11111	0	NULL

Kernel

- `zImage-4.1.21-rt13-WR8.0.0.30_preempt-rt`

GNU/Linux?

```
[user@hostname ~]$ strings /run/media/user/WD-Fa
*,0K
@ #!
!1C "
  -- System halted
Attempting division by 0!
stack-protector: Kernel stack is corrupted
Uncompressing Linux...
done, booting the kernel.
decompressor returned an error
invalid distance too far back
```

Location:  `./var/lib/deere/reprogramming/redbend_repo/gen4os_From_10.18.1754-89_To`

name	Size ▲	Type	Modified
RPMScripts	32.6 kB	Folder	27 July 2021, 18:36
Content.mld	45.0 MB	unknown	27 July 2021, 18:36
ContentFiles.txt	1.6 MB	Adobe Ja...	27 July 2021, 18:36
RedBendUpdater	195.4 kB	unknown	27 July 2021, 18:33
ContentVerification	2.5 kB	unknown	27 July 2021, 18:36
ContentInstall	2.4 kB	unknown	27 July 2021, 18:36
gen4osContentTurtle_From_10.18.1754-89-10.20.2002-89.a...	2.4 kB	RPM pack...	27 July 2021, 18:36
gen4osContentTurtle-10.20.2002-89.armv7hlv2.rpm	2.3 kB	RPM pack...	27 July 2021, 18:36
ContentPostInstall	2.0 kB	unknown	27 July 2021, 18:36
runpostinstallscripts	1.3 kB	unknown	27 July 2021, 18:36
runpreinstallscripts	1.3 kB	unknown	27 July 2021, 18:36
runpostuninstallscripts	1.0 kB	unknown	27 July 2021, 18:36
runpreuninstallscripts	1.0 kB	unknown	27 July 2021, 18:36
ContentPostUnInstall	775 bytes	unknown	27 July 2021, 18:36
ContentPreInstall	775 bytes	unknown	27 July 2021, 18:36
ContentPreUnInstall	775 bytes	unknown	27 July 2021, 18:36
ContentUnInstall	775 bytes	unknown	27 July 2021, 18:36

```
02-89/RPMscripts/reprogrammingis-postuninstall.sh
```

```
#!/bin/sh
```

```
#!/bin/sh
```

```
#####
```

```
## Copyright (c) Deere & Company as an unpublished work
```

```
## THIS SOFTWARE AND/OR MATERIAL IS THE PROPERTY OF DEERE & COMPANY. ALL USE,
```

```
## DISCLOSURE, AND/OR REPRODUCTION NOT SPECIFICALLY AUTHORIZED BY DEERE &
```

```
## COMPANY IS PROHIBITED.
```

```
#####
```

```
# update ld cache for change in libraries present
```

```
ldconfig
```

```
#####
```

```
## Copyright (c) Deere & Company as an unpublished work
```

```
## THIS SOFTWARE AND/OR MATERIAL IS THE PROPERTY OF DEERE & COMPANY. ALL USE,
```

```
## DISCLOSURE, AND/OR REPRODUCTION NOT SPECIFICALLY AUTHORIZED BY DEERE &
```

```
## COMPANY IS PROHIBITED.
```

```
#####
```

```
[user@hostname RPMscripts]$ █
```

```
1 #!/bin/sh
2 ldconfig
3
4 #####
5 # Copyright (c) Deere & Company as an unpublished work
6 # THIS SOFTWARE AND/OR MATERIAL IS THE PROPERTY OF DEERE & COMPANY.  ALL USE,
7 # DISCLOSURE, AND/OR REPRODUCTION NOT SPECIFICALLY AUTHORIZED BY DEERE &
8 # COMPANY IS PROHIBITED.
9 #####
10 |
```

Jam packed with free software

- FSF suggestions:
 - (1) subsequent users get the exact same freedoms and
 - (2) subsequent intermediaries do not get more opportunity than first-stage intermediaries to make the program nonfree.

Can I change the repo?

Can I change the repo?

- Manually, yes

Can I change the repo?

- **Manually, yes**
- **Otherwise, signed RPM repo over USB**

Can I change the repo?

- **Manually, yes**
- **Otherwise, signed RPM repo over USB**
- **Invasive, but acceptable (in my perspective, with respect to security)**

USB Drive Options



What would you like to do?



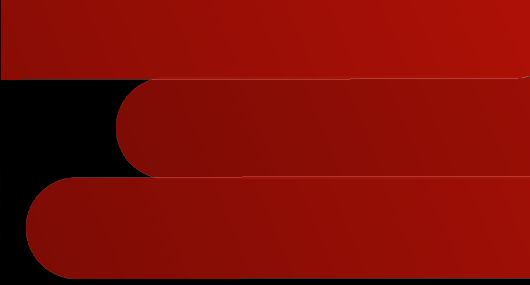
Import Data



Export Data



Install Software



USB Drive | Display Updates



Software

Version



AMS Applications

10.17.1559



Generation 4 OS

10.17.1559

(2) items selected

Cancel

Install

Can I modify stock?

- **No**
- Vendor prevents customer from installing packaged over USB that are not signed by Deere

However

- Normal in GNU/Linux

Digging

```
[user@hostname 63addb50-6feb-4b35-bfe7-9c64ab0b7915]$ ls -lh
total 88K
drwxr-xr-x 20 root root 4.0K Jun 14 2022 .
drwxr-x---+ 12 root root 240 Mar 6 22:04 ..
drwxr-xr-x 2 root root 4.0K Feb 11 2022 bin
drwxr-xr-x 2 root root 4.0K Jan 1 2013 boot
drwxr-xr-x 2 root root 4.0K Jan 1 2013 dev
drwxr-xr-x 60 root root 4.0K Jan 1 2013 etc
drwxr-sr-x 2 root root 4.0K Feb 10 2022 home
drwxr-xr-x 9 root root 4.0K Feb 11 2022 lib
drwxr-xr-x 2 root root 4.0K Feb 11 2022 logging
drwx----- 2 root root 16K Jan 1 2013 lost+found
drwxr-xr-x 2 root root 4.0K Feb 10 2022 media
drwxr-xr-x 2 root root 4.0K Feb 11 2022 mnt
drwxr-xr-x 5 root root 4.0K Jan 1 2013 opt
drwxr-xr-x 2 root root 4.0K Jan 1 2013 proc
drwxr-xr-x 2 root root 4.0K Jan 1 2013 root
drwxr-xr-x 2 root root 4.0K Jan 1 2013 run
drwxr-xr-x 2 root root 4.0K Feb 11 2022 sbin
drwxr-xr-x 2 root root 4.0K Jan 1 2013 sys
lrwxrwxrwx 1 root root 7 Jan 1 2013 tmp -> run/tmp
drwxr-xr-x 12 root root 4.0K Jun 14 2022 usr
drwxr-xr-x 2 root root 4.0K Jan 1 2013 var
```


Refer to the manual

**JDLink™ Modular
Telematics Gateway 4G LTE,
Service ADVISOR™ Remote,
and Ethernet Switch**



OPERATOR'S MANUAL

Pass along the same freedoms

Third Party Software Notifications and Licenses

The copyrights for certain portions of the Software may be owned or licensed by other third parties (“Third Party Software”) and used and distributed under license. The Third Party Notices include the acknowledgements, notices, and licenses for the Third Party Software. The Third Party Notices are available on the CD included with this Operator’s Manual. The Third Party Software is licensed according to the applicable Third Party Software license notwithstanding anything to the contrary in the applicable Software End User License Agreement. The Third Party Software contains copyrighted software that is licensed under the GPL/LGPL or other copyleft licences.

Copies of those licenses are included in the Third Party Notices.

You may obtain the complete Corresponding Source Code from us for a period of three years after our last shipment of the Software by sending a request letter to:

Deere Open Source Compliance Team
P.O. Box 1202
Moline, IL 61266-1202 USA

Please include “source for John Deere MTG 4G LTE” and the version number of the software in the request letter. This offer is valid to anyone in receipt of this information.

AE77568,000020D -19-23JUN16-1/1

Copies of those licenses are included in the Third Party Notices.

You may obtain the complete Corresponding Source Code from us for a period of three years after our last shipment of the Software by sending a request letter to:

Deere Open Source Compliance Team

P.O. Box 1202

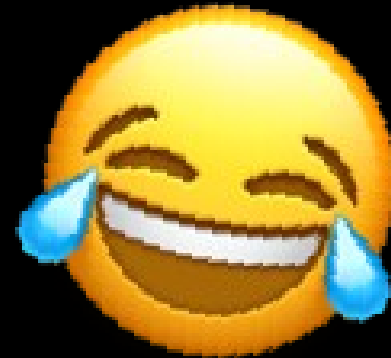
Moline, IL 61266-1202 USA

Corresponding Source

- *The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.*

Could Deere be
leaders of “open
source”?

Could Deere be
leaders of “open
source”?



The “Open Source” tractor

- I asked Deere for the code in 2021

The “Open Source” tractor

- I asked Deere for the code in 2021
- Asked the FSF to be the mailing address

1 John Deere Open Source Software (OSS)

2 MTG 4G LTE 21-1

3

4 The source archives included in this archive were compiled per:

5 Host machine: Ubuntu 14.04, x86_64

6 Target machine: x86 core2-32 architecture

7 GCC version: 5.2.0

8

9 Each package has its own unique build procedure. Refer to the package's website
for more

10 information on how it is configured and built.

11

12

13 Platform GPL Sources - 4.0.659

14

15 For each OSS package in platform-sources-*.tar.bz2 there are two files:

16 <package-name>-<version>.<hex-number>.src.list.txt

17 This file contains the manifest of the src.tar.gz archive below. It is
provided



























18 as a convenient reference.

19 <package-name>-<version>.<hex-number>.src.tar.gz

20 This file is the OSS source code for the package. It includes three main
components:

21 - The tar archive of the source code.

22 - The patch files applied to the source code before it was built. The file

Name	Size	Type	Modified
 linux-windriver-4.1-r0.90.1.27f695a5.src.tar.gz	205.6 MB	Tar arch...	19 March 2021, 21:53
 gcc-source-5.2.0-5.2.0-r0.6.1.b0d72f50.src.tar.gz	95.3 MB	Tar arch...	19 March 2021, 21:53
 glibc-2.22-r0.14.1.de86a127.src.tar.gz	27.7 MB	Tar arch...	19 March 2021, 21:55
 rpm-5.4.14-r0.8.1.ae245546.src.tar.gz	14.0 MB	Tar arch...	19 March 2021, 21:53
 compat-wireless-ti-8.7-r10.0.5.1.204780a9.src.tar.gz	7.9 MB	Tar arch...	19 March 2021, 21:54
 libwebsockets.tgz	7.5 MB	Tar arch...	01 April 2021, 12:35
 glib-2.0-1_2.44.1-r0.3.1.35d914d9.src.tar.gz	7.2 MB	Tar arch...	19 March 2021, 21:53
 syslinux-6.03-r0.2.1.8283442b.src.tar.gz	6.9 MB	Tar arch...	19 March 2021, 21:53
 e2fsprogs-1.42.9-r0.4.1.56aela7f.src.tar.gz	6.1 MB	Tar arch...	19 March 2021, 21:53
 coreutils-6.9-r5.3.1.bd7858ce.src.tar.gz	5.5 MB	Tar arch...	19 March 2021, 21:53
 gnutls-3.3.17.1-r0.6.1.c09c6bd2.src.tar.gz	5.2 MB	Tar arch...	19 March 2021, 21:55
 p7zip_9.20.1.tgz	4.3 MB	Tar arch...	01 April 2021, 12:35
 util-linux-2.26.2-r0.9.1.37d6d238.src.tar.gz	3.9 MB	Tar arch...	19 March 2021, 21:56
 gnupg-1.4.7-r9.3.1.eb876347.src.tar.gz	3.2 MB	Tar arch...	19 March 2021, 21:53
 syslog-ng-3.5.4.1-r0.19.1.aff26c3d.src.tar.gz	3.1 MB	Tar arch...	19 March 2021, 21:54
 libgcrypt-1.6.3-r1.5.1.ef508a81.src.tar.gz	2.9 MB	Tar arch...	19 March 2021, 21:55
 bluez-5.48.tgz	2.6 MB	Tar arch...	01 April 2021, 12:35
 bash-3.2.48-r11.7.1.9283b615.src.tar.gz	2.6 MB	Tar arch...	19 March 2021, 21:53
 gmp-6.0.0-r0.8.1.2ab77e04.src.tar.gz	2.4 MB	Tar arch...	19 March 2021, 21:55
 gawk-3.1.5-r2.5.1.544ee945.src.tar.gz	2.3 MB	Tar arch...	19 March 2021, 21:53
 busybox-1.23.2-r0.8.1.3a35dc77.src.tar.gz	2.3 MB	Tar arch...	19 March 2021, 21:53
 readline-5.2-r9.1.1.02a70e9f.src.tar.gz	2.1 MB	Tar arch...	19 March 2021, 21:53
 nettle-3.1.1-r0.4.1.eaf1a12f.src.tar.gz	2.0 MB	Tar arch...	19 March 2021, 21:55
 dbus-1.8.20-r0.12.1.33cd2696.src.tar.gz	1.9 MB	Tar arch...	19 March 2021, 21:53
 tar-1.17-r3.1.1.05533417.src.tar.gz	1.9 MB	Tar arch...	19 March 2021, 21:54
 elfutils-0.148-r11.2.1.9a5486a6.src.tar.gz	1.9 MB	Tar arch...	19 March 2021, 21:53

What did I get?

What did I get?

- Not much

What did I get?

- Not much
- But the box was received source code box was “ticked” by me

What did I get?

- Not much
- But the box was received source code box was “ticked” by me
- We received Deere’s wine patches, among other things

What did I get?

- Not much
- But the box was received source code box was “ticked” by me
- We received Deere’s wine patches, among other things
- Seemed fine to me, compare with real

So how far did I get?

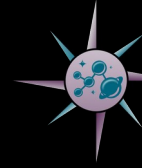
“Seemed”

Update Thursday, August 18, 2022, at 12:15 pm ET: John Deere sent WIRED the following statement: "John Deere's top priority is, and will always be, to protect our customers, their machines, and their data. The capabilities that Sick Codes demonstrated during his recent presentation at DEF CON were obtained through invasive/persistent physical access, disassembly of a hardware product and reverse engineering of proprietary software. At no point were a customer or dealer's equipment, networks, or data at risk.



Statement by Deere about me

- *invasive/persistent physical access, disassembly of a hardware product and reverse engineering of **proprietary software***



LIBREPLANET 2023
CHARTING THE COURSE



*Can I modify my Deere
to get 4 freedoms?*



Freedom observed – freedom 0

- *The freedom to run the program as you wish, for any purpose (freedom 0).*

Freedom 0 demo

- It runs the tractor exactly as described.
- Also:
 - armv7hl
 - atom
 - corei7_64
 - armv7hlv2
 - noarch

Freedom 0 demo

- It runs the tractor exactly as described.
- Also:
 - armv7hl
 - atom
 - corei7_64
 - armv7h1v2
 - noarch
- **Apart from software activations.**

freedom 1

- *The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.*

freedom 1

• *The freedom to study how the*
their machines, and their data. The capabilities that Sick
Codes demonstrated during his recent presentation at DEF
CON were obtained through invasive/persistent physical
access, disassembly of a hardware product and reverse
engineering of proprietary software. At no point were a

Freedom 1 demo

- I studied the code, for a *long* time.

Freedom 1 demo

- I studied the code, for a *long* time.
- While Deere did not like it, I felt confident in the environment

Freedom 1 demo

- *...change it so it does your computing as you wish (freedom 1)*

Freedom 1 demo

- *...change it so it does your computing as you wish (freedom 1)*
- I could remove all non-free if I wished.

freedom 2

- The freedom to redistribute copies so you can help others (freedom 2).

...redistribute copies...

John Deere Software Manager

Use this tool to update software on John Deere 4600 or 4100 CommandCenter(TM) Display.
Here's what you need to



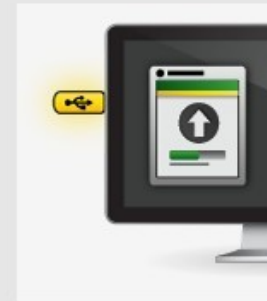
1. Download + Sync

- (a) Download the latest software.
- (b) Sync to USB.



2. Install

Install the software on John Deere 4600 or 4100 CommandCenter(TM) Display.



3. Upload

Upload the software version information to John Deere from USB.

Select Drive

C:\ (OSPartition)

Download

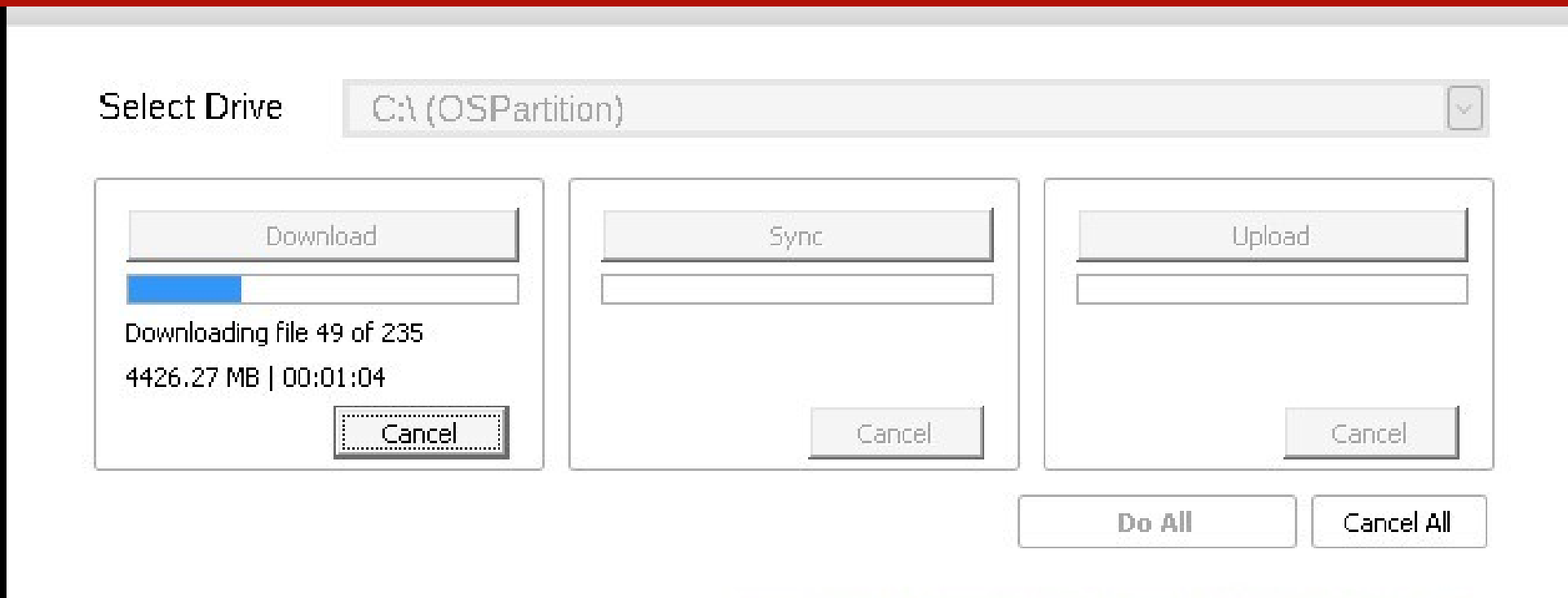
Downloading file 49 of 235

4426.27 MB | 00:01:04

Sync

Upload

User-friendly GUI frontend



gedit-plugins-data.armv7hl	42.1-1.fc36	updates
geeqie.armv7hl	1.7.3-1.fc36	updates
gegl04.armv7hl	0.4.36-1.fc36	updates
gegl04-devel.armv7hl	0.4.36-1.fc36	updates
gegl04-devel-docs.armv7hl	0.4.36-1.fc36	updates
gegl04-tools.armv7hl	0.4.36-1.fc36	updates
gemdropx.armv7hl	0.9-29.fc36	fedora
gen4os.noarch	10.22.2362-53	jd-display-updates
gen4os_To_10.21.2144-121.aarch64	1.0.0-1	jd-display-updates
gen4os_To_10.21.2144-121.armv7hlv2	1.0.0-1	jd-display-updates
gen4os_To_10.21.2144-121.corei7_64	1.0.0-1	jd-display-updates
gen4os_To_10.22.2362-53.aarch64	1.0.0-1	jd-display-updates
gen4os_To_10.22.2362-53.armv7hlv2	1.0.0-1	jd-display-updates
gen4os_To_10.22.2362-53.corei7_64	1.0.0-1	jd-display-updates
gen4os_To_10.9.79-185.armv7hl	1.0.0-1	jd-display-updates
gen4os_To_10.9.79-185.atom	1.0.0-1	jd-display-updates
gen4os_To_10.9.79-185.corei7_64	1.0.0-1	jd-display-updates
gen4oscore.armv7hl	10.9.79-185	jd-display-updates
gen4oscore.atom	10.9.79-185	jd-display-updates
gen4oscore.aarch64	10.22.2362-53	jd-display-updates
gen4oscore.armv7hlv2	10.22.2362-53	jd-display-updates
gen4oscore.corei7_64	10.22.2362-53	jd-display-updates
gen4oshelp.noarch	10.9.125-6	jd-display-updates
gen4oshelp_To_10.8.116-6.noarch	1.0.0-1	jd-display-updates
gen4oshelp_To_10.9.125-6.aarch64	1.0.0-1	jd-display-updates
gen4oshelp_To_10.9.125-6.armv7hlv2	1.0.0-1	jd-display-updates
gen4oshelp_To_10.9.125-6.corei7_64	1.0.0-1	jd-display-updates
genchemlab.armv7hl	1.0-34.fc36	fedora
genders.armv7hl	1.27.2-10.fc36	fedora
genders-compatible.noarch	1.27.2-10.fc36	fedora
genders-java.armv7hl	1.27.2-10.fc36	fedora
genders-java-devel.armv7hl	1.27.2-10.fc36	fedora

gen4os_To_10.21.2144-121.aarch64
gen4os_To_10.21.2144-121.armv7hlv2
gen4os_To_10.21.2144-121.corei7_64
gen4os_To_10.22.2362-53.aarch64
gen4os_To_10.22.2362-53.armv7hlv2
gen4os_To_10.22.2362-53.corei7_64
gen4os_To_10.9.79-185.armv7hl
gen4os_To_10.9.79-185.atom
gen4os_To_10.9.79-185.corei7_64
gen4oscore.armv7hl
gen4oscore.atom
gen4oscore.aarch64
gen4oscore.armv7hlv2
gen4oscore.corei7_64
gen4oshelp.noarch
gen4oshelp_To_10.8.116-6.noarch
gen4oshelp_To_10.9.125-6.aarch64
gen4oshelp_To_10.9.125-6.armv7hlv2

freedom 3

- The freedom to distribute copies of your **modified versions** to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes.
Access to the source code is a precondition for this.

Why modify anyway?

JOHN DEERE

SR INSTALLATION of PCGUMUA00552B - 1.1

English: Your system has entered System Recovery. Please contact your John Deere Dealer to attempt data recovery and software reinstallation. Dealers please refer to latest machine or display technical manual for more information.

Español: Su sistema ha entrado en modo de Recuperación. Por favor comuníquese con el concesionario John Deere para intentar la recuperación de datos y la reinstalación del software. Los concesionarios deben consultar el manual técnico más reciente de la máquina o de la pantalla.

Français: Votre système a démarré une récupération du système. Veuillez contacter votre concessionnaire John Deere pour tenter une récupération de données et une réinstallation du logiciel. Concessionnaires : veuillez vous reporter au manuel technique le plus récent de la machine ou de la console pour plus d'informations.

Deutsch: Ihr System befindet sich im Systemwiederherstellungsmodus. Bitte wenden Sie sich an Ihren John Deere-Händler, um eine Datenwiederherstellung und Neuinstallation der Software zu versuchen. Händler sollten das neueste technische Handbuch der Maschine oder des Displays heranziehen, um weitere Informationen zu erhalten.

Português: Seu sistema iniciou a Recuperação do Sistema. Entre em contato com o seu distribuidor John Deere para tentar efetuar a recuperação dos dados e a reinstalação do software. Distribuidor, consulte o manual técnico do monitor ou da máquina mais recente para obter mais informações.

Italiano: Il sistema in uso è entrato in fase Recupero sistema. Rivolgersi al concessionario John Deere di zona per procedere al recupero dei dati ed alla reinstallazione del software. Per ulteriori informazioni i concessionari possono consultare il manuale tecnico della macchina o del display più recente.

g. Please contact your John Deere Dealer to
n. Dealers please refer to latest machine

eración. Por favor comuníquese con el

**What if I don't
have a dealer?**

g. Please contact your John Deere Dealer to
n. Dealers please refer to latest machine

eración. Por favor comuníquese con el

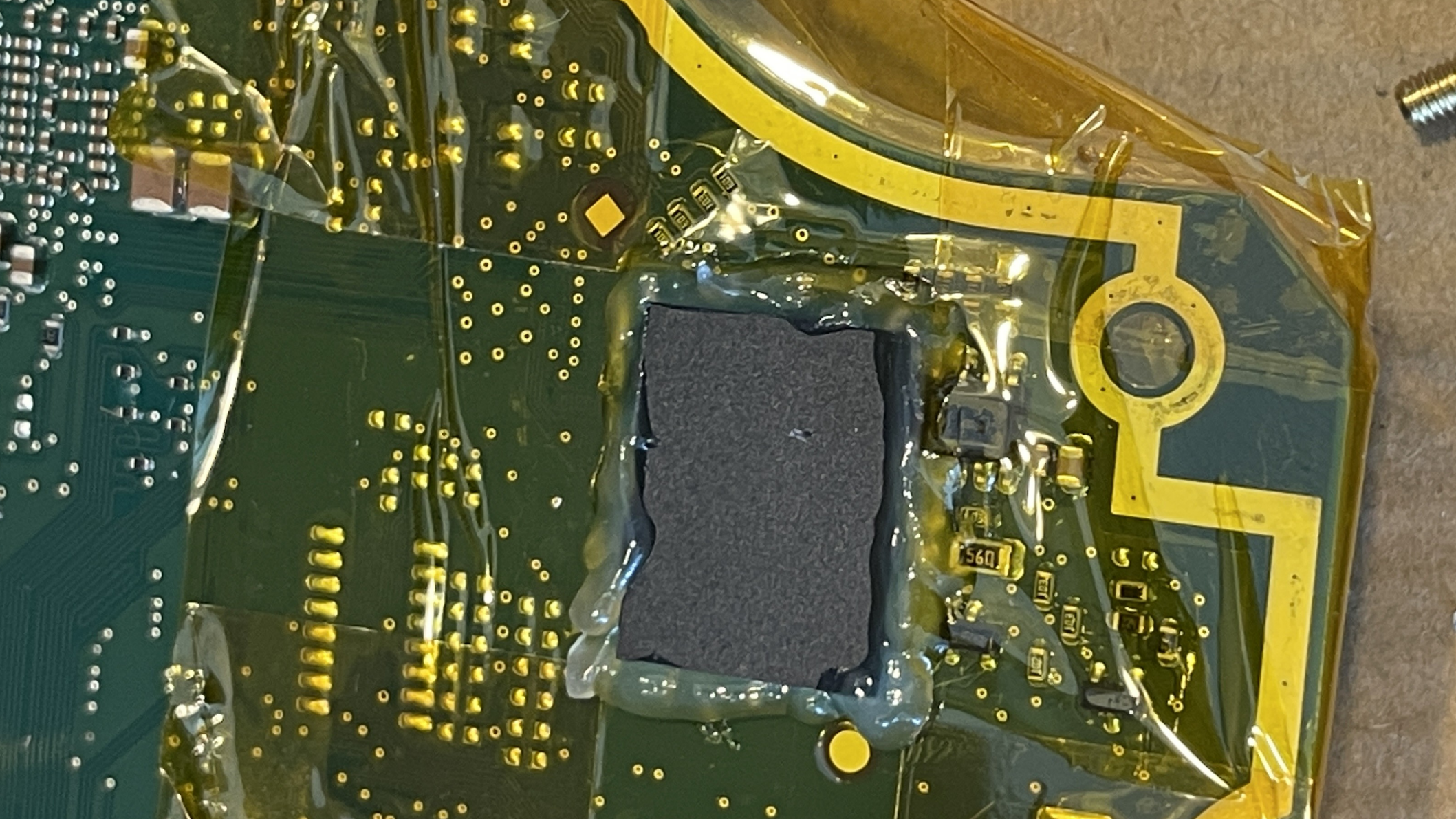
What if I don't
have a dealer?

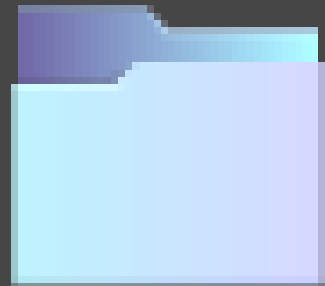


LOOK AT ME

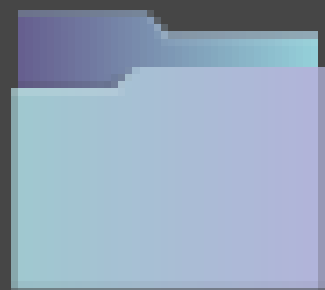
I AM THE DEALER NOW



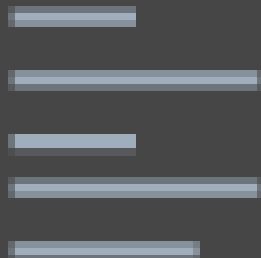




JD-Display-Updates-JD5



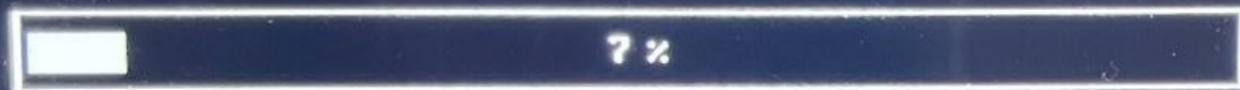
.Trash-1000



dealerAuth

SR INSTALLATION of PCGUMUA005528 - 1.5

Backing up data to USB drive...



(?) Maintain electrical power
(?) Do not remove USB drive

Fixed

- But also augmented it...

My modified version

- Demo

JOHN DEERE

Ams

23:11



USB Drive Options



What would you like to do?



Import Data



Export Data



Install Software

SETUP

WORK
OFF

AUTOTRAC
OFF

GUIDANCE

CHUCK LINE

SWAP TRACK

ISO
ISOBUS VT

DISPLAY

BOUNDARY

MENU

JOHN DEERE

Ams

23:11



USB Drive Options



What would you like to do?



Import Data



Export Data



Install Software

SETUP

WORK OFF

AUTOTRAC OFF

GUIDANCE

QUICK LANE

SWAP TRACK

ISO
ISOBUS VT

DISPLAY

BOUNDARY

MENU

JOHN DEERE

Ams

23:11



Location

A
Client

Farm

Ok
Field

AutoTrac

Guidance
Off

Counters A

446,43

ha

Guidance

Guidance
Off

Counters A

→ 0

20-10-2020

x-terminal-emulator



cli-3.2#



WORK
OFF



AUTOTRAC
OFF



GUIDANCE



QUICK LINE



SNAP TRAC



ISO
ISOBUS VT



DISPLAY



BOUNDARY



MENU

JOHN DEERE

Ams



No Name



x-terminal-emulator



```
ALSA lib conf.c:4555:(snd_config_update_r) Cannot access file /usr/share/alsa/alsa.conf
ALSA lib conf.c:4555:(snd_config_update_r) Cannot access file /usr/share/alsa/alsa.conf
ALSA lib pcm.c:2664:(snd_pcm_open_noupdate) Unknown PCM default
Error initialising SDL_mixer: Please check your mixer device: No such file or directory
ALSA lib conf.c:4555:(snd_config_update_r) Cannot access file /usr/share/alsa/alsa.conf
OPL_Init: No sound card or a working driver.
Dude: The H01B isn't responding.
NET_Init: Init network game status.
M_Init: Init miscellaneous files.
R_Init: Init DOOM refresh routines.
P_Init: Init Playloop support. [.....]
S_Init: Setting up sound.
D.CheckNetGame: Checking network game status.
startskill 2 deathmatch: 0 startmap: 1 startepisode: 1
player 1 of 1 (1 nodes)
Emulating the behavior of the 'Doom' executable.
HU_Init: Setting up heads up display.
ST_Init: Init status bar.
error: XDG_RUNTIME_DIR not set in the environment.
```

446,4

AMMO 0 HEALTH 100% ARMS 2 7 4
5 6 2



ARMOR 0%

BULL	0	200
SHEL	0	50
ROCK	0	50
LEAD	0	300

- ✓
- ✓
- ✓

SETUP

OFF

OFF

GUIDANCE

QUICK LINK

SWAP TRACK

ISOBUS VT

DISPLAY

BOUNDARY

MENU

Guidance

020

JOHN DEERE

Ams



No Name



PICKED UP A HEALTH BONUS.



x-terminal-emulator



```
ALSA lib conf.c:4555:(snd_config_update_r) Cannot access file /usr/share/alsa/alsa.conf
ALSA lib conf.c:4555:(snd_config_update_r) Cannot access file /usr/share/alsa/alsa.conf
ALSA lib pcm.c:2664:(snd_pcm_open_noupdate) Unknown PCM default
Error initialising SDL_mixer: ALSA: Couldn't open audio device: No such file or directory
ALSA lib conf.c:4555:(snd_config_update_r) Cannot access file /usr/share/alsa/alsa.conf
NPL_Init: Failed to find a working driver.
...
1. CheckNetGame: Check network game status.
starts: 11 2. deathmatch: 0. 3. coop: 1. startepisode: 1
player 1 of 1 (1 nodes)
Emulating the behavior of the '1.00-1.99' executable.
SU_Init: Setting needs to display.
SI_Init: Init successful.
error: The SDL_VIDEO not set in the environment.
```

446,4

ha

96%

2 3 4
5 6 7



0%

BULL 0 / 200
SHELL 0 / 50
ROCK 0 / 50
LELL 0 / 300

AMMO

HEALTH

ARMS

ARMOR

SETUP

OFF

OFF

GUIDANCE

QUICK LINE

SNAP TRACK

ISOBUS VT

DISPLAY

BOUNDARY

MENU

JOHN DEERE

Ams

No Name

PICKED UP AN ARMOR BONUS.

x-terminal-emulator

```
ALSA lib conf.c:4555:(snd_config_update_r) cannot access file /usr/share/alsa/alsa.conf
ALSA lib conf.c:4555:(snd_config_update_r) cannot access file /usr/share/alsa/alsa.conf
ALSA lib pcm.c:2664:(snd_pcm_open_noupdate) Unknown PCM default
error: initialising SDL_mixer: ALSA: Could not open audio device: No such file or directory
ALSA lib conf.c:4555:(snd_config_update_r) cannot access file /usr/share/alsa/alsa.conf
ALSA lib pcm.c:2664:(snd_pcm_open_noupdate) Unknown PCM default
error: initialising SDL_mixer: ALSA: Could not open audio device: No such file or directory
ALSA lib conf.c:4555:(snd_config_update_r) cannot access file /usr/share/alsa/alsa.conf
ALSA lib pcm.c:2664:(snd_pcm_open_noupdate) Unknown PCM default
error: initialising SDL_mixer: ALSA: Could not open audio device: No such file or directory
Init: Init network...
Init: Init miscellan...
Init: Init BOOM refs...
Init: Init Playloop...
Init: Setting up sound.
B.CheckNetGame: Checking network game status.
start: 11 2 deathmatch: 0 Start up: 1 started: 1
player 1 of 1 (1 nodes)
Emulating the behavior of the "boom 1.9" executable.
Init: Setting up...
Init: Init status...
error: SDL_RUNTIME_LIBRARY not set in the environment.
```

446,4

ha

136%

2 9 9
5 5 7



34%

BULL 0
SHEL 0
ROCK 0
LELL 0

200
50
50
300

AMMO

HEALTH

ARMS

ARMOR

OFF

OFF

GUIDANCE

GUIDE LINE

TRAP TRACK

ISOBUS VT

DISPLAY

BOUNDARY

MENU

LILY HAY NEWMAN

SECURITY AUG 13, 2022 9:31 PM

A New Jailbreak for John Deere Tractors Rides the Right-to-Repair Wave

Limited-Time Offer [Subscribe Now](#)



Proof of Concept

- Third party software
- Replace non-free, with free software
- Software repair

Freedom 3 discussion

- The freedom to distribute copies of your modified versions to others (freedom 3).



32 photos

2022 John Deere S790

♥ Save

Hours: 355

Sep. Hours: 259

Combine Type: Corn/Bean, Axle: PRWD, Duals/Singles: Duals, Options: Yield Monitor Contour Master (Lateral Tilt Feederhouse) Sidehill Harvest Mobile Powercast Tailboard Power Folding Bin Extension Fore/Aft Adv... [See all seller comments](#)

♥ Get Extended Service Plan

\$607,500

Est. \$0 monthly

💰 Get Financing



AgriVision Equipment - Pender

Pender, NE

(833) 459-5631



30 photos

2020 John Deere S790

♥ Save

Hours: 757

Sep. Hours: 553

Combine Type: Rice, Axle: PRWD, Duals/Singles: Singles, Chopper/Spread: Spreader, Options: Yield Monitor Contour Master (Lateral Tilt Feederhouse) Fore/Aft Active Yield Advisor Package Power Folding Bin E... [See all seller comments](#)

♥ Get Extended Service Plan

\$415,583

Est. \$7,822 monthly

💰 Get Financing



Legacy Equipment - New Madrid

New Madrid, MO

(573) 267-5616

Freedom 3 discussion

Re-purposing a \$500,000 tractor to play doom is a small niche.

- ...By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

Chocolate Doom is Free Software

Chocolate Doom is [Open Source](#) and [Free Software](#), licensed under the [GNU General Public License v2](#).

All downloads are GPG-signed by [Chocolate Doom's principal author](#). See [the downloads directory](#) for the full listing, including GPG signatures.

The OSI logo trademark is the trademark of Open Source Initiative.

But in any case . . .



Microsoft Windows binaries: choose the game you want to play:

- [Chocolate Doom](#) for Windows
- [Chocolate Heretic](#) for Windows
- [Chocolate Hexen](#) for Windows
- [Chocolate Strife](#) for Windows



Apple macOS binaries:

- [Chocolate Doom](#) for macOS (unified package, supports all four games.)



Source code (all platforms; [GNU GPL v2](#)):

- [Chocolate Doom source code](#)
- [GPG signature](#)
- [Git repository](#)



Linux, BSD and other Unix-like systems: The Chocolate Doom project does not distribute binaries for these systems, but there are packages available in



So is Deere Free Software?

- By definition, no

So is Deere Free Software?

- **By definition, no**
- **Some non-free packages**

So is Deere Free Software?

- By definition, no
- Some non-free packages
- Ability to modify, albeit annoying

So is Deere Free Software?

- **By definition, no**
- **Some non-free packages**
- **Ability to modify, albeit annoying**
- **Required substantial reverse engineering**

Could it be modified back to
free software?

Could it be modified back to
free software?

Sure

What about other Ag software?

Competition

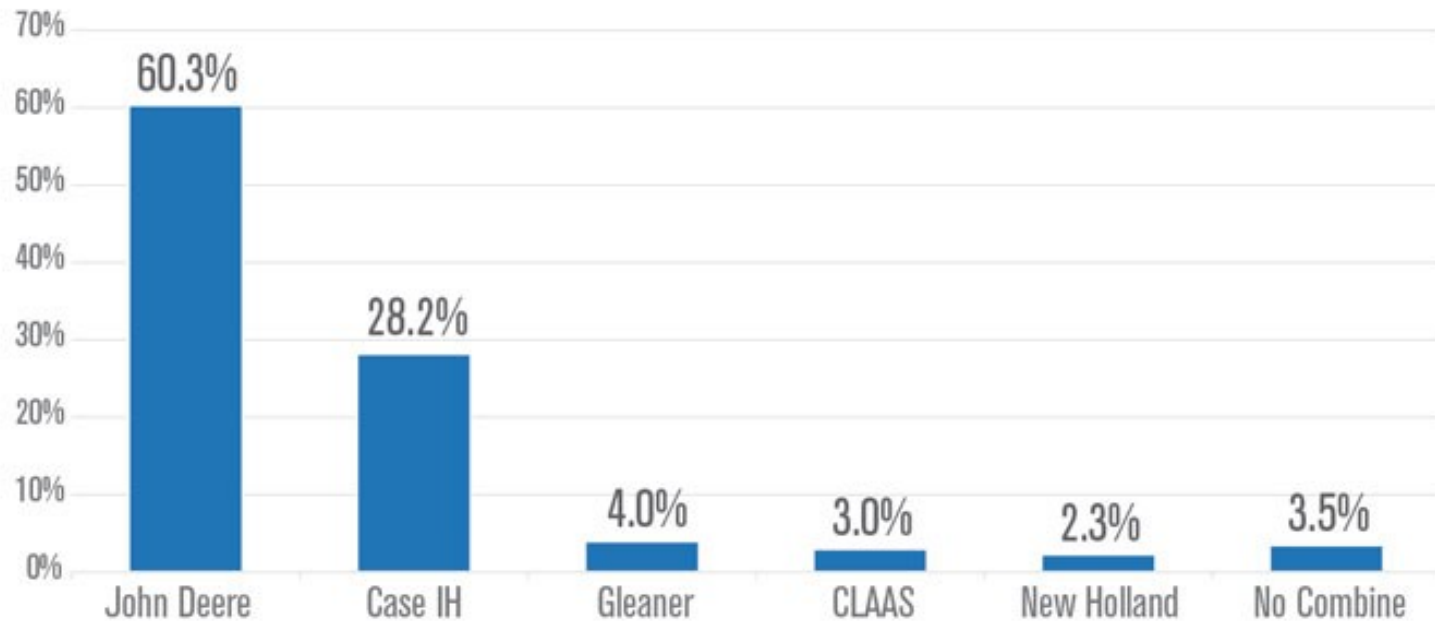
- AgCo - FENDT,
Massey Ferguson
- CASE IH & New
Holland
- CAT*
- Claas
- Deere
- Kubota
- JCB
- Valtra
- Versatile
- Deutz

Competition

<https://www.agequipmentintelligence.com/articles/5601-study-finds-60-of-surveyed-us-farmers-own-a-deere-combine?v=preview>

Brand Market Share – Combines

Over 60% of farmers own a John Deere Combine



Source: Avant Marketing Group 2022 Power Brand Study

Complex machines



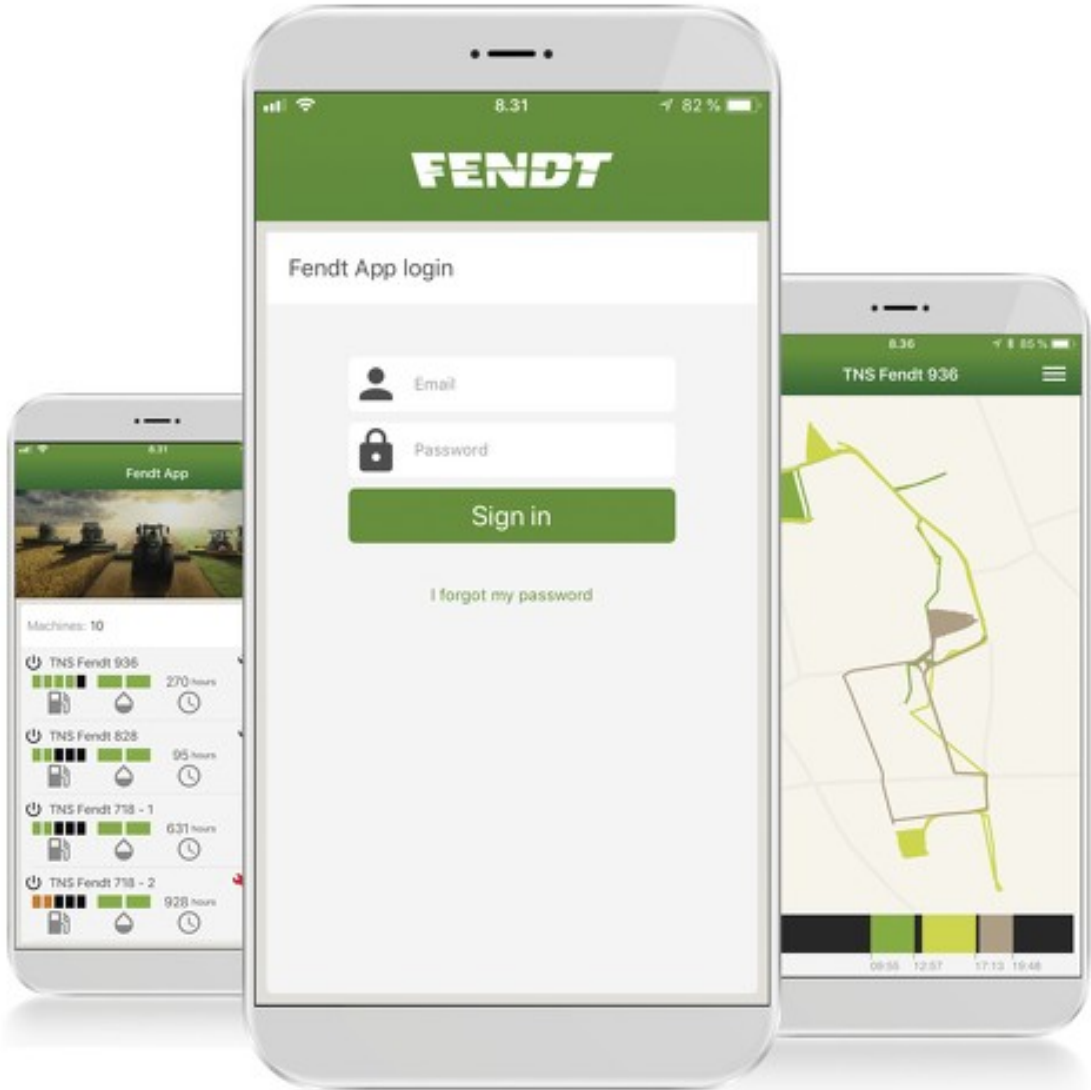
<https://www.malaysia.claas.com/news-testimonials/current/claas-news/a-portrait-of-the-claas-production-network--many-places--one-passion-/2724484>

AGCO



[https://
www.fendt.com/int/
smart-farming/machine-
control](https://www.fendt.com/int/smart-farming/machine-control)





AGCO

- Machine position and route
- Fuel consumption and AdBlue level
- Speed and working time
- Machine capacity
- Error messages
- Upcoming service intervals

AGCO



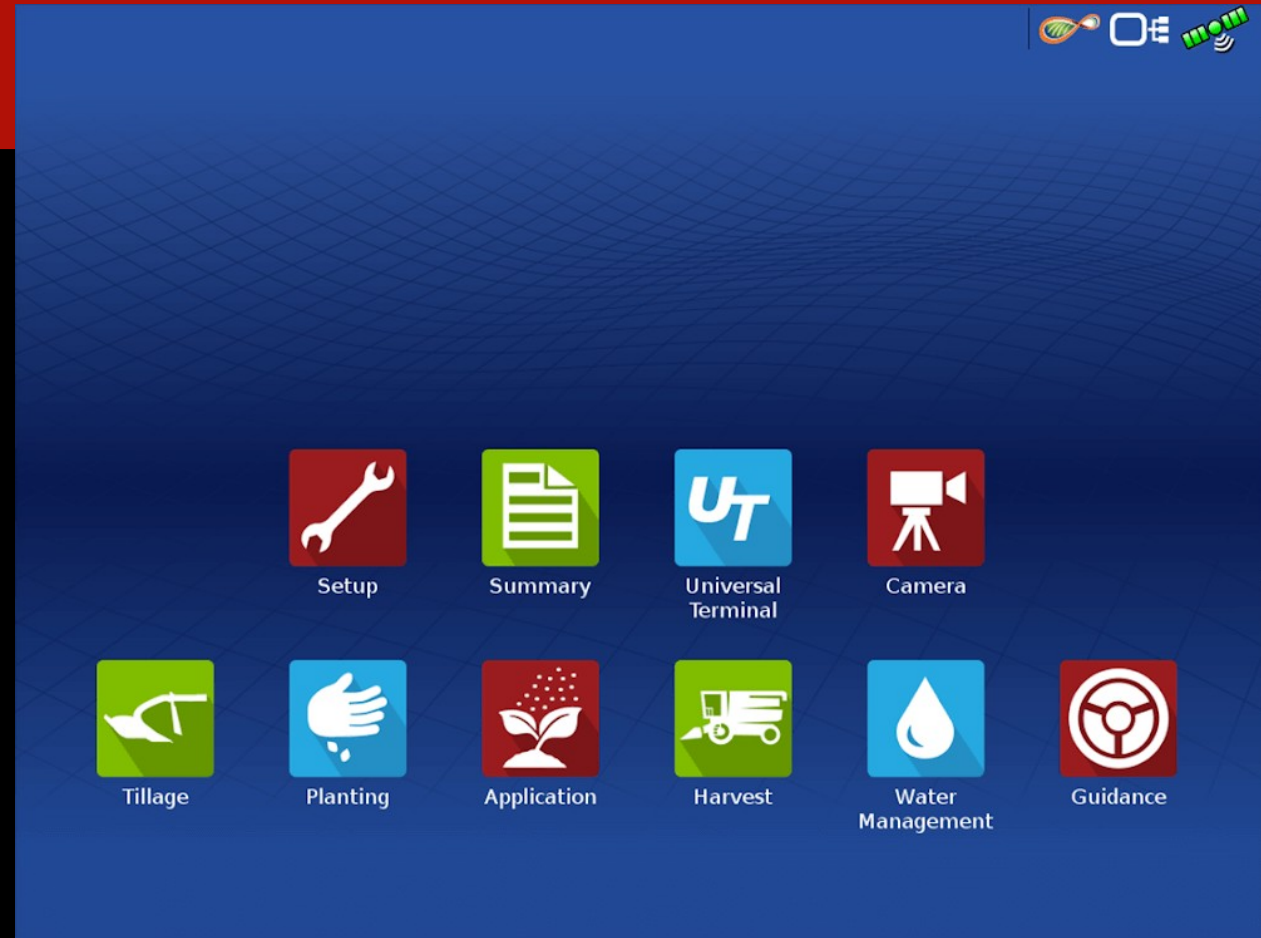
CASE IH & New Holland

- Android



Photo: Koos Groenewold

AgLeader



<https://www.agleader.com/media-center/>

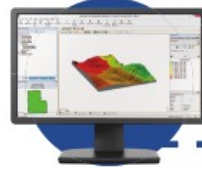
A



Powerful Tools to Discover Profit Opportunities:

SMS Software:

SMS Software supports the majority of precision ag display file types allowing you to combine and analyse all your data in one place. Powerful analysis tools allow you to dig deeper into your data and identify areas of opportunity including field and guidance line management, soil-sampling, prescriptions, tile planning and more. SMS pairs seamlessly with AgFiniti to allow you to take these insights with you to the field.



PLAN IT, MANAGE IT, PROFIT

Precision farming isn't about spending endless hours crunching numbers and analysing data. It's about answering questions that can make you more profitable. That's the simple idea behind Ag Leader's industry-leading data management tools: easy-to-use decision-making tools to help you capture the most out of every hectare.

AgFiniti:

AgFiniti connects your entire operation including your displays and devices to share your information across your team including trusted advisors. Access both historical and real-time information for on-the-go decision-making and insights into your fields. Quickly and easily generate prescriptions and dig deeper into your information using query tools, Multi-Year Analysis and Comparison Reports.



AgLeader

Ag Leader[®]



Downloads & Resources

[InCommand 800/1200 User Manual](#)

[InCommand 1200 Firmware](#)

[InCommand 800 Firmware](#)

AgLeader

- Also GNU/Linux

AgLeader

- Also GNU/Linux
- MX6 – U-Boot (License: GPL-2.0-or-later)

Topcon



Topcon



<https://www.topconpositioning.com/field-software-and-controllers/field-controllers/rugged-tablets>

Topcon



<https://www.topconpositioning.com/field-software-and-controllers/field-controllers/rugged-tablets>

**Are there ANY completely
free software solutions?**

Yes



AgOpenGPS

GNU GENERAL PUBLIC LICENSE Version 3

AgOpenGPS

farmerbriantee / AgOpenGPS Public template

Notifications

Fork 203

Star 403

- Code
- Issues 1
- Pull requests 3
- Actions
- Projects
- Wiki
- Security
- Insights

master

Go to file

Code

About

Ag Precision Mapping, Section Control and Guidance Software

Readme

Unknown, Unknown licenses found

403 stars

98 watching

203 forks

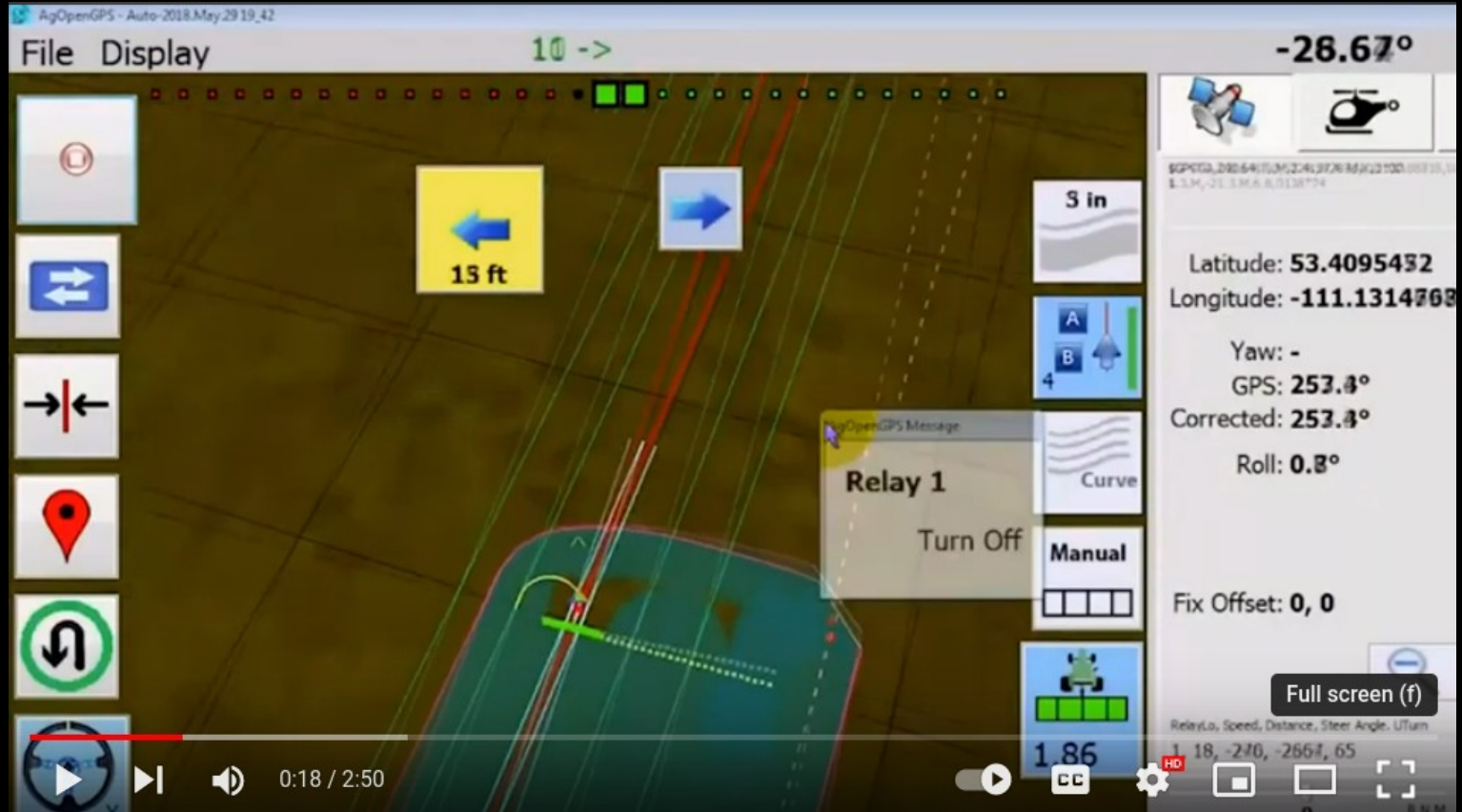
farmerbriantee Merge pull request #305 from farmer... 5 days ago 1,433

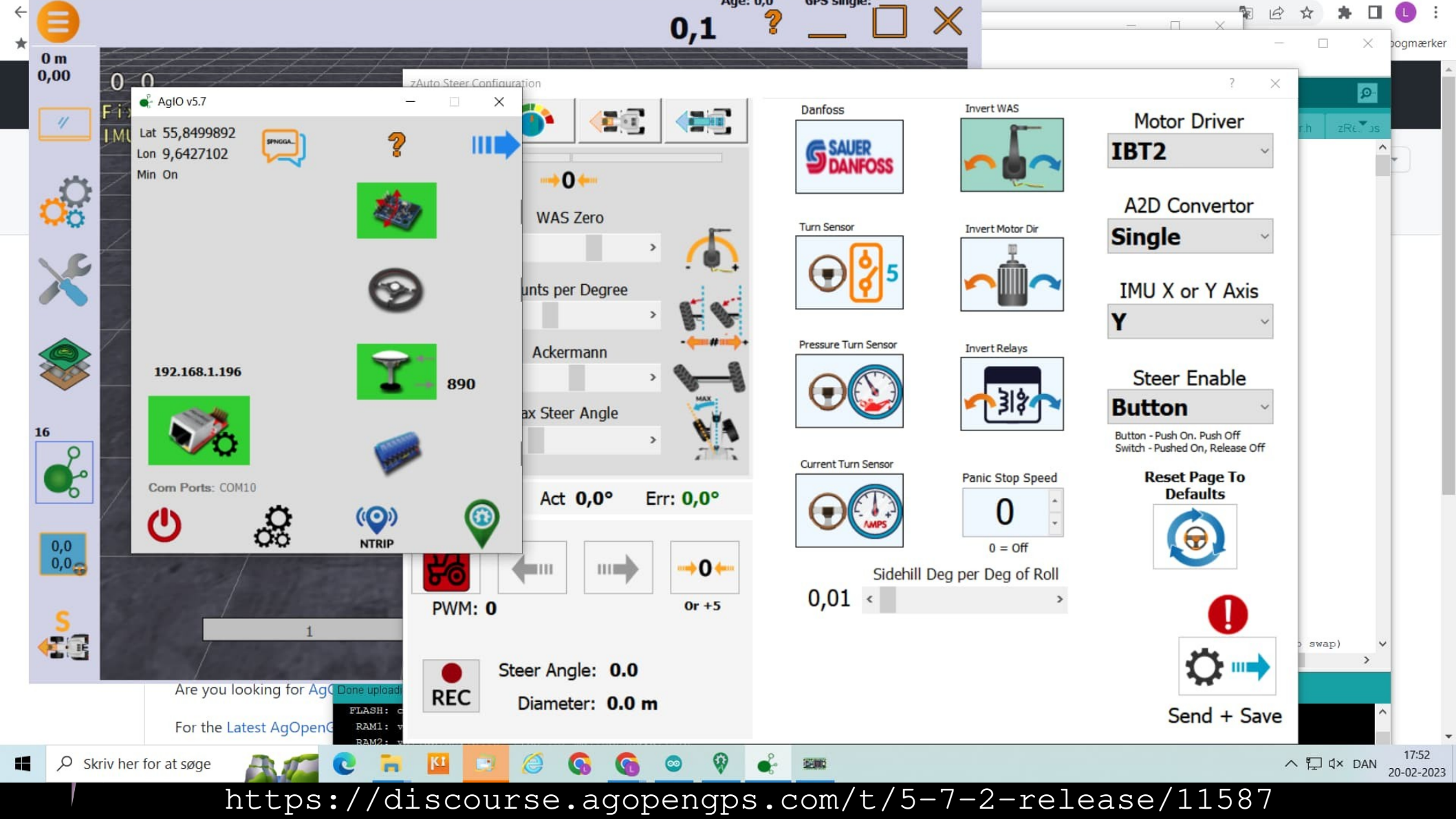
.github/workflows	Update BuildAndRelease.yml	2 months ago
SourceCode	shutoff flash when min	3 weeks ago
.gitattributes	Added .gitattributes & .gitignore files	7 years ago
.gitignore	Remove and ignore __vm	3 months ago
LICENSE	Remove v4	2 years ago



AgOpenGPS started as an experiment by a farmer in Alberta Canada, Brian Tishler,

Free Software Alternative





AgIO v5.7

Lat 55,8499892
Lon 9,6427102
Min On

192.168.1.196

Com Ports: COM10

NTRIP

WAS Zero

Units per Degree

Ackermann

Max Steer Angle

Act 0,0° Err: 0,0°

PWM: 0 Or +5

Danfoss

Invert WAS

Turn Sensor

Invert Motor Dir

Pressure Turn Sensor

Invert Relays

Current Turn Sensor

Panic Stop Speed

0 = Off

Sidehill Deg per Deg of Roll

0,01

Motor Driver

IBT2

A2D Converter

Single

IMU X or Y Axis

Y

Steer Enable

Button

Button - Push On, Push Off
Switch - Pushed On, Release Off

Reset Page To Defaults

Send + Save

REC

Steer Angle: 0.0

Diameter: 0.0 m

466 m
0.00

2303

0.3
0.5
0.000

AB-AB 274.9° West

4.00 m - JD4650

3.21 ha 3.21 ha 01:32 100.0% 0.00 ha

466 m 0.00

2303

0.3 0.5 0.000

462

gim: cobegrees (camheading);

Call Stack Exception Settings Immediate Window Error List Locals Watch 1

Ready

AgOpenGPS (unni...)

C:\Users\lenos\Des...

Telegram (70)

Recording...

AgOpenGPS

AgOpenGPS

Sticky

2:39 P...

2021-06-08

Edit AB Line

m 2.00

cm 20

274.93148



5.16

A-B 0

0

M

Ln: 378 Ch: 104 SPC CRLF

Scroll for details

Wine



Version 5.7.2

Terms and Conditions

Copyright (c) 2023, Brian Tischler
All rights reserved.

Any use of AgOpenGPS is not recommended for real physical equipment.. No safety is built in or implied. Auto-guidance is extremely dangerous so don't do it.

AgOpenGPS is protected under GPLv3

If you distribute copies of this FREE program, whether gratis or for a fee, improved, changed, you must pass on to the recipients the same freedoms that you received as Outlined in the GPLv3 License.

You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights. Don't steal others work and call it your own.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL Brian Tischler or the AgOpen Community BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Discussions at...

<https://discourse.agopengps.com/>

Check for Updates

<https://github.com/farmerbriantee/AgOpenGPS>



I Want



I Agree to the Terms

Brian Tischler

Version 5.7.2

Terms and Conditions

Copyright (c) 2023, Brian Tischler
All rights reserved.

Any use of AgOpenGPS is not recommended for real physical equipment.. No safety is built in or implied. Auto-guidance is extremely dangerous so don't do it.

AgOpenGPS is protected under GPLv3

If you distribute copies of this FREE program, whether gratis or for a fee, improved, changed, you must pass on to the recipients the same freedoms that you received as Outlined in the GPLv3 License.

You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights. Don't steal others work and call it your own.

Lat 0.0000000
Lon 0.0000000
Min 305



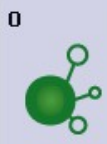
192.168.122.1
192.168.1.3
10.0.3.1
10.152.97.1
10.5.155.217



Com Ports: COM4



0 m
0.00



0.0
0.0



Age: 0.0
Sim:



Simulator On

1 2 3



Many farmers using it

farmerbriantee / AgOpenGPS Public template

Notifications

Fork 203

Star 403

<> Code Issues 1 Pull requests 3 Actions Projects Wiki Security Insights

master

Go to file

Code

About

farmerbriantee Merge pull request #305 from farmer... ✓ 5 days ago 1,433

.github/workflows Update BuildAndRelease.yml 2 months ago

SourceCode shutoff flash when min 3 weeks ago

.gitattributes 🏰 Added .gitattributes & .gitignore files 7 years ago

.gitignore Remove and ignore __vm 3 months ago

LICENSE Remove v4 2 years ago

Ag Precision Mapping, Section Control and Guidance Software

Readme

Unknown, Unknown licenses found

403 stars

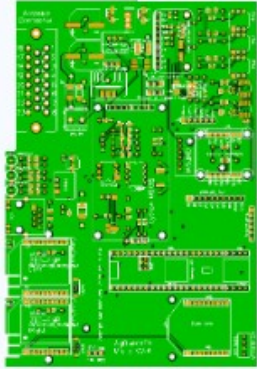
98 watching

203 forks

Can I help?

- https://github.com/farmerbriantee/A_gOpenGPS
- https://github.com/farmerbriantee/A_gOpenGPS/wiki
- https://github.com/farmerbriantee/A_gOpenGPS_Boards
-

AgOpenGPS



[← Back to Upload File](#)

Detected 4 layer board of 160.14x110.02mm(6.3x4.33 inches) .

[🔍 Gerber Viewer](#)

Summary

- Agriculture runs on Free Software

Summary

- Agriculture runs on Free Software
- Extremely capable GPLv3 solutions on the market, and in-use

Summary

- Agriculture runs on Free Software
- Extremely capable GPLv3 solutions on the market, and in-use
- Opportunity for some manufacturers to open up their code, or face obsolescence

Thank you

- <https://sick.codes>
- GitHub: <https://github.com/sickcodes>
- Twitter: <https://twitter.com/sickcodes>
- LinkedIn: <https://www.linkedin.com/in/sickcodes/>
- Mastodon: <https://sick.social/>

SICK.CODES