



John Deere Mobile RTK Modem 4G LTE



JOHN DEERE



OPERATOR'S MANUAL

John Deere Mobile RTK Modem 4G LTE

OMPFP27022 ISSUE J5 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:



WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.



John Deere Ag Management Solutions

Introduction

Foreword

THANK YOU for purchasing a John Deere product.

READ THIS MANUAL carefully to learn how to operate and service your product correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your product may also be available in other languages. See www.techpubs.deere.com (Ag&Turf/JDPS), www.johndeeretechno.com (C&F), or your John Deere dealer to order.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your product and should remain with the product when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction the product or implement will travel when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (PIN) in the Specification or Product Numbers section. Accurately record all the numbers to help in tracing the product should it be stolen. PIN information is helpful when ordering parts. File the identification numbers in a secure place off the product.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate or statement which you should have received at time of purchase.

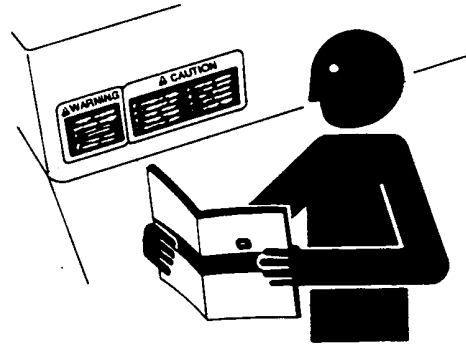
This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory

specifications, the warranty will become void and field improvements may be denied.

If you are not the original owner of this product, it is in your interest to contact your local John Deere dealer to inform them of this unit's serial number. This will help John Deere notify you of any issues or product improvements.

DX,IFC5E-19-08SEP25

John Deere Is at Your Service



TS201—UN—15APR13

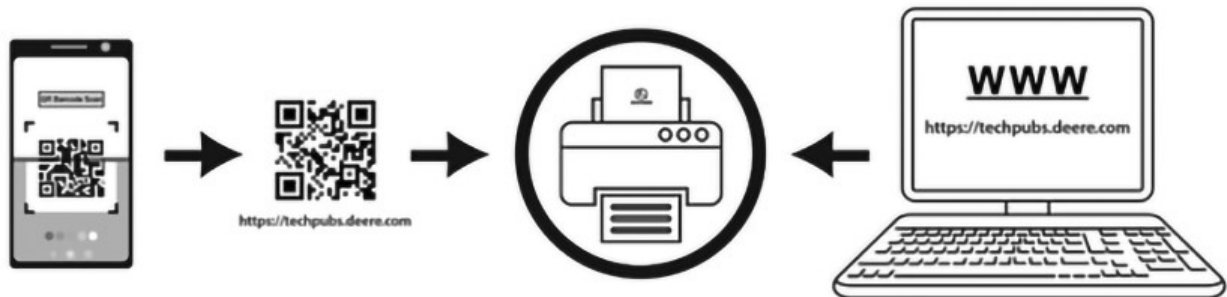
Customer satisfaction is important to John Deere.

Our dealers strive to provide you with prompt, efficient parts, and service:

- Maintenance and service parts to support your equipment.
- Trained service technicians and the necessary diagnostic and repair tools to service your equipment.
- **John Deere replacement parts, repair services, and information for maintenance or repair are available. For more information, please visit deere.com or deere.ca.**

DX,IFC,JDS-19-30SEP25

Download Instructions



Instructions, manuals, and other documents may be downloaded at [www.techpubs.deere.com](https://techpubs.deere.com). Scanning the QR code on a mobile device will route to the site automatically.

Les instructions, les manuels et autres documents peuvent être téléchargés à cette adresse: [www.techpubs.deere.com](https://techpubs.deere.com). Scanner le QR code via un appareil mobile mène automatiquement au site.

Istruzioni, manuali e altri documenti possono essere scaricati su [www.techpubs.deere.com](https://techpubs.deere.com). La scansione del codice QR su un dispositivo portatile indirizza automaticamente al sito.

Anleitungen, Handbücher und andere Dokumente können unter [www.techpubs.deere.com](https://techpubs.deere.com) heruntergeladen werden. Durch Scannen des QR-Codes mit einem Mobilgerät wird man automatisch zur Webseite weitergeleitet.

Las instrucciones, los manuales y otros documentos se pueden descargar en [www.techpubs.deere.com](https://techpubs.deere.com). Al escanear el código QR en un dispositivo móvil, se abrirá automáticamente el sitio web.

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Инструкции, руководства и другие документы можно загрузить на странице [www.techpubs.deere.com](https://techpubs.deere.com). Сканирование QR-кода на мобильном устройстве будет автоматически отправлять на сайт.

Trademarks

Trademarks	
AutoTrac™	Trademark of Deere & Company
Chrome™	Trademark of Google Inc.
Firefox®	Trademark of the Mozilla Foundation
GreenStar™	Trademark of Deere & Company
Internet Explorer®	Trademark of Microsoft Corporation
RTK Extend™	Trademark of Deere & Company
StarFire™	Trademark of Deere & Company

bvvnmsit,1676450829111-19-16FEB23

John Deere Technical Information Bookstore

Product functionality may not be fully represented in this document due to product changes occurring after time of printing. Read the latest Operator's Manual prior to operation. To obtain a copy, see dealer or visit techpubs.deere.com.

CZ76372,000071F-19-04AUG25

Read This Manual

IMPORTANT: Displays are not weather-proof and should only be used on machines equipped with a cab. Improper use may void warranty.

Before operating display or software, familiarize yourself with components and procedures required for safe and proper operation.

RW00482,0000289-19-09APR14

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Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Safety

Recognize Safety Information



T81389—UN—28JUN13

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

DX,ALERT-19-03OCT22

Understand Signal Words



▲ WARNING

▲ CAUTION

TS187—19—30SEP88

DANGER; The signal word DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION; The signal word CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events which could lead to personal injury.

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards. DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

DX,SIGNAL-19-05OCT16

Follow Safety Instructions



TS201—UN—15APR13

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

DX,READ-19-01AUG22

Replace Safety Signs



TS201—UN—15APR13

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.

DX,SIGNS1-19-04JUN90

Practice Safe Maintenance



TS218—UN—23AUG88

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing away from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

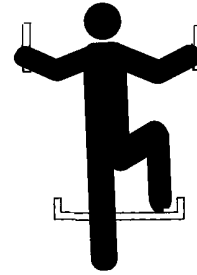
On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.

Falling while cleaning or working at height can cause serious injury. Use a ladder or platform to easily reach each location. Use sturdy and secure footholds and handholds.

DX,SERV-19-28FEB17

Use Steps and Handholds Correctly



T133468—UN—15APR13

Prevent falls by facing the machine when getting on and off. Maintain 3-point contact with steps, handholds, and handrails.

Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease or oil. Never jump when exiting machine. Never mount or dismount a moving machine.

DX,WW,MOUNT-19-12OCT11

Handle Electronic Components and Brackets Safely



TS249—UN—23AUG88

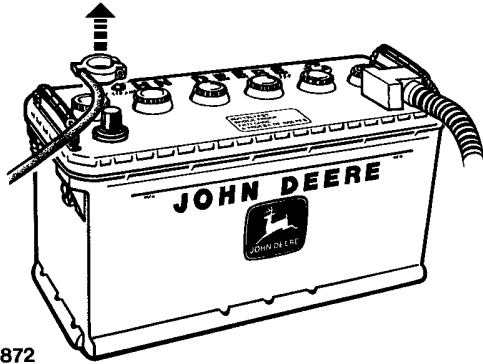
Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.

If installing or servicing a RTK base station on a tower or other tall structure, use a certified climber.

If installing or servicing a global positioning receiver mast used on an implement, use proper lifting techniques and wear proper protective equipment. The mast is heavy and can be awkward to handle. Two people are required when mounting locations are not accessible from the ground or from a service platform.

DX,WW,RECEIVER-19-24AUG10

Electrical System — General Instructions on Safety



LX 000872

LX000872—UN—19SEP94

CAUTION: Avoid Electrical Shock. Before working on the electrical system, always disconnect battery ground cable (-).

NOTE: Refer also to the Technical Manual before installing, removing or adjusting components.

OUC6043,0000313-19-03APR24

wide range of functionality, are used in many different machine system applications and can be used with other secondary devices such as handheld electronic devices.

A secondary device is any device that is not required to operate your machine for its primary use. The operator is always responsible for safe operation and control of the machine.

To prevent injury while operating the machine:

- Position the display according to the installation instructions. Ensure that the device is secured and does not obstruct the driver's view or interfere with the machine operating controls.
- Do not become distracted by the display. Stay alert. Pay attention to the machine and surrounding environment.
- Do not change settings or access any functions that require prolonged use of the display controls while machine is moving. Stop the machine in a safe location and place in park position before attempting such operations.
- Never set the volume so high that you cannot hear outside traffic and emergency vehicles.

Use Technical Manuals



ZX1051364—UN—20NOV12

When performing the work described in this instruction, use relevant Technical Manuals for additional service instruction.

Carefully read and comply with safety messages and cautions presented throughout the text.

Both diagnostic and repair technical manuals are concise guides for specific equipment. They are on-the-job instructions containing vital information to diagnose, analyze, test, and repair the equipment.

OUC6043,0000314-19-28MAR24

To promote safe operation, certain functions of displays may be disabled unless the machine movement is restricted and/or has been placed in the park position. Overriding this safety feature may violate applicable law and can result in damage, serious injury, or death.

Only use available display functionality when conditions permit you to do so safely and in accordance with instructions provided. Always observe safe driving rules, state, or local laws and traffic regulations when using any secondary device.

DX,ELEC,DISPLAY-19-13JAN15

Prevent Electrical Shock and Fires



PC12631—UN—04JUN10

Use Electronic Display Properly

Electronic displays are secondary devices intended to aid the operator in performing field operations, increase comfort and provide entertainment. Displays offer a

Battery-powered equipment or other electric power sources produce an electrical shock, sparks, or arcs if a short circuit occurs. Electrical short circuits can reach

temperatures high enough to burn people, or ignite or melt common materials.

To prevent injury from electrical shock, burns, or potential fire hazards, always disconnect battery power or other electric power source on equipment before installing or servicing:

- Remove ground (negative terminal [-]) battery clamp.
- Detach and remove battery.
- Switch off main battery or other electric power source.
- Unplug electric power source from equipment.

Understand and follow all local codes and regulations when installing electrical equipment.

HC94949,0000487-19-27JAN14

Avoid Exposure to High Radio Frequency Fields



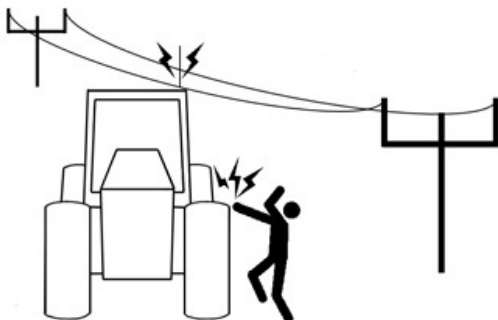
PC12632—UN—04JUN10

Prevent injury from exposure to high radio frequency fields at the antenna. Do not touch antenna while the system is transmitting. Always disconnect power to the antenna before installing or servicing.

The antenna should always be separated from the operator or nearby persons by a minimum distance of 20 cm (8 in.).

JS56696,0000C0E-19-11DEC12

Avoid Electrical Power Lines



PC13658—UN—08NOV11

Machine antenna may be high enough to come in

contact with low-hanging electrical cables. Avoid severe electrical shock injury:

- Keep away from all low-hanging electrical cables while operating or transporting machine.

HC94949,0000488-19-24JAN14

Waste Electrical and Electronic Equipment



PC17530—UN—06AUG13

Products marked with the crossed-out wheeled bin symbol indicate electrical and electronic equipment that must not be disposed of as unsorted municipal or household waste.

Send electrical and electronic equipment, accessories and packaging for environmental recycling.

RM72004,00001E6-19-05AUG13

Regulatory and Compliance Information

Canada—Notifications to Users

Canada—Notifications to Users

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

This radio transmitter (IC:7830A-PLS63W) has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

PFP15283

Omnidirectional external antenna

Maximum 2 dBi gain

50-ohms impedance

RF Exposure Guidance

This equipment complies with Innovation, Science and Economic Development Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (8 in) between the radiator and persons. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter, except in accordance with Innovation, Science and Economic Development Canada multi-transmitter product procedures.

Canada—Notifications aux utilisateurs

Cet appareil contient des émetteurs ou des récepteurs exempts de licence qui sont conformes aux CNR d'Innovation, Sciences et Développement économique Canada qui sont exempts de licence. L'exploitation est soumise aux deux conditions suivantes:

1. Cet appareil ne peut pas causer d'interférence.
2. Cet appareil doit accepter toute interférence, y compris les interférences qui peuvent provoquer un fonctionnement indésirable de l'appareil.

Cet émetteur radio (IC:7830A-PLS63W) a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antennes énumérés ci-dessous, avec le gain maximal admissible indiqué. Les types d'antennes non inclus dans cette liste qui ont un gain supérieur au gain maximal indiqué pour n'importe quel type répertorié sont strictement interdits pour l'utilisation avec ce périphérique.

PFP15283

Antenne externe omnidirectionnelle

Gain maximal de 2 dBi

Impédance de 50 ohms

Lignes directrices sur l'exposition aux RF

Cet équipement est conforme aux limites d'exposition au rayonnement établies par Innovation, Sciences et Développement économique Canada pour un environnement non contrôlé. Cet équipement devrait être installé et utilisé à une distance minimale de 20 cm (8 in.) entre le radiateur et les personnes. Cet émetteur ne doit pas être co-implanté ou exploité conjointement avec une autre antenne ou émetteur, sauf en conformité avec les procédures relatives aux produits à émetteurs multiples d'Innovation, Sciences et Développement économique Canada.

PC596446—UN—13OCT23

bvmsit, 1697196911475-19-13OCT23

Federal Communications Commission Notifications to User

John Deere Mobile RTK Modem 4G LTE

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

These devices must be operated as supplied by John Deere Ag Management Solutions. Any changes or modifications made to these devices without the express written approval of John Deere Ag Management Solutions may void the user's authority to operate these devices.

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, no guarantee shall be made that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Supplier's Declaration of Conformity

Unique Identifier: John Deere M-RTK
Responsible Party: Deere & Company
One John Deere Place
Moline, IL 61265
FCCInfo@JohnDeere.com

RF Exposure Guidance

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (8 in) between the radiator and persons. This transmitter must not be co-located or operating in conjunction with any other antenna or

transmitter, except in accordance with FCC multi-transmitter product procedures.

bvwmst,1671028454618-19-13OCT23

Product Label

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canada ICES-003(B)/NMB-003(B)

Contains FCC ID: QIPPLS63-W

Contains IC: 7830A-PLS63W

bvwmst,1697197054278-19-13OCT23

End User License Agreement (EULA)

The use of the John Deere Mobile RTK Modem is governed by the End User License Agreement which can be found on: <https://isg-contracts.deere.com>.

bvwmst,1753866331123-19-30JUL25

Third-Party Software Notice

The John Deere Mobile RTK Modem software contains third-party software components which are governed by the licenses listed in our Third-Party Software Notice which can be found on: <https://isg-contracts.deere.com>.

bvwmst,1753866405887-19-05AUG25

EU Declaration of Conformity

Deere & Company
Moline, Illinois U.S.A.

The undersigned hereby declares that:

Product Name: John Deere Mobile RTK Modem 4G LTE

fulfill(s) all relevant provisions and essential requirements of the following directives:

DIRECTIVE	NUMBER	CERTIFICATION METHOD
Directive on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC (RED)	2014/53/EU	Annex II of the Directive
Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)	2011/65/EC	Article 7 of the Directive

The product is in conformity with the following standards and/or other normative documents:

EN 301 489-1 V2.2.3	EN 301 908-2 V11.1.1
EN 301 489-17 V3.2.4	EN 301 908-13 V11.1.1
EN 301 489-52 V1.1.0 (draft)	EN 301 511 V12.5.1
EN 55032:2015 (in parts)	EN 62311:2008
EN 55035:2017 (in parts)	EN 62368-1: 2014/AC: 2015/A11: 2017/AC:2017
EN ISO 14982:2009	EN 18031-1:2024
EN 301 908-1 V13.1.1	EN 18031-2:2024

Name and address of the person in the European Community authorized to compile the technical construction file:

John Deere Walldorf GmbH & Co. KG
Customer Support
Impexstraße 3
D-69190 Walldorf
EUConformity@JohnDeere.com

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Place of Declaration: Torrance, 90503 CA, USA

Date of Declaration: 16 July 2025

Name: Rick Grefsrud

Title: General Manager, ISG Torrance



DXCE01—UN—28APR09
bvmsit,1753864705773-19-30JUL25

UK Declaration of Conformity

Deere & Company
Moline, Illinois, U.S.A.

The undersigned hereby declares that:

Product: John Deere Mobile RTK Modem 4G LTE

fulfill(s) all relevant provisions and essential requirements of the following UK regulations:

REGULATION	NUMBER	CERTIFICATION METHOD
The Radio Equipment Regulations	S.I. 2017 / 1206	Schedule 2, Module A
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations	S.I. 2012 / 3032	Part 2, Section 12

The product is in conformity with the following standards and/or other normative documents:

EN 301 489-1 V2.2.3	EN 301 908-13 V13.2.1
EN 301 489-52 V1.2.1	EN 301 511 V12.5.1
EN 55032:2015	EN 62311:2008
EN 55035:2017	EN 62368-1: 2014/AC: 2015/A11: 2017/AC:2017
EN ISO 14982:2009	EN 301 489-17 V3.2.4 (applies only to PFA12676)
EN 301 908-1 V15.1.1	EN 300 328 V2.2.2 (applies only to PFA12676)
EN 301 908-2 V13.1.1	ECE Regulation No. 10, Revision 6

Name and address of the person authorized to compile the technical construction file:

John Deere Ltd.
Harby Road
Langar
Nottinghamshire
NG13 9HT
United Kingdom
EUConformity@JohnDeere.com

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Place of Declaration: 67657 Kaiserslautern, Germany

Name: Stefan Stahlmecke

Date of Declaration: 12. June 2023

Title: Regional Director ISG

Manufacturing Unit: John Deere GmbH & Co. KG
Intelligent Solutions Group
67657 Kaiserslautern, Germany

Ag &Turf Products Importer: John Deere Ltd- Harby Road, Langar, Nottinghamshire, NG13 9HT, United Kingdom

Forestry Products Importer: John Deere Forestry Ltd- Carlisle Airport Industrial Estate, Carlisle, Cumbria, CA6 4NW, United Kingdom

Construction Importer: Wirtgen Limited, Wirtgen Group House, Overfield Park, Godfrey Drive, Newark, Notts. NG24 2UA, United Kingdom

bvwmst,1671031151381-19-13OCT23



RXA0179545—UN—16APR21

Ukraine Declaration of Conformity

ДЕКЛАРАЦІЯ ПРО ВІДПОВІДНІСТЬ	
1. Радіобладнання: <u>Модем систем цифрового стільникового зв'язку GSM-900/1800, IMT 2000 (UMTS Band I/VIII), LTE (E-UTRA Band 20/8/3/7)</u>	
2. Найменування та адреса виробника або його уповноваженого представника: <u>ДЖОН ДІР ГмбХ & Ко. КГ, Інтелігент Солошнс Груп Кайзерслаутерн, Страббургер Аллее 3, 67657, Кайзерслаутерн, Німеччина (JOHN DEERE GmbH & Co. KG, Intelligent Solutions Group Kaiserslautern, Straßburger Allee 3, 67657, Kaiserslautern, Germany)</u>	
3. Ця декларація про відповідність видана під особистою відповідальністю виробника.	
4. Об'єкт декларації: Назва обладнання: <u>Модем систем цифрового стільникового зв'язку GSM-900/1800, IMT 2000 (UMTS Band I/VIII), LTE (E-UTRA Band 20/8/3/7)</u> Тип/модель: <u>Mobile RTK Modem 4G LTE</u> Найменування або торговельна марка: <u>John Deere</u> Номер партії чи серійний номер: <u>продукція виготовляється серійно</u> Ідентифікаційні дані: Виробник: <u>ДЖОН ДІР ГмбХ & Ко. КГ, Інтелігент Солошнс Груп Кайзерслаутерн, Страббургер Аллее 3, 67657, Кайзерслаутерн, Німеччина (JOHN DEERE GmbH & Co. KG, Intelligent Solutions Group Kaiserslautern, Straßburger Allee 3, 67657, Kaiserslautern, Germany)</u> Місце виробництва: <u>ВЕЛОТЕК ГмбХ, Зюм Хагенбах 7, 48366 Лар, Німеччина (WELOTEC GmbH, Zum Hagenbach 7, 48366 Laer, Germany)</u>	
5. Об'єкт декларації відповідає вимогам таких технічних регламентів: - Технічного регламенту радіобладнання, затвердженого постановою Кабінету Міністрів України від 24 травня 2017 р. № 355 (Офіційний вісник України, 2017 р., № 045, ст.1396). Виконання суттєвих вимог було доведено.	
6. Були застосовані відповідні стандарти з переліку національних стандартів (або технічні специфікації, щодо яких декларується відповідність): пункт 6 Регламенту (безпека, захист здоров'я, безпека людей і домашніх тварин, захист власності): <u>ДСТУ EN 62368-1:2017, ДСТУ EN 62311:2014</u> пункт 6 Регламенту (електромагнітна сумісність): <u>ДСТУ ETSI EN 301 489-1:2019, ETSI EN 301 489-52 V1.2.1</u> пункт 7 Регламенту (ефективне використання радіочастотного ресурсу): <u>ДСТУ ETSI EN 301 511:2016, ДСТУ ETSI EN 301 908-1:2018, ДСТУ ETSI EN 301 908-2:2017, ДСТУ ETSI EN 301 908-13:2018</u>	
7. Призначений орган з оцінки відповідності: <u>ДЕРЖАВНЕ ПІДПРИЄМСТВО «ВСЕУКРАЇНСЬКИЙ ДЕРЖАВНИЙ НАУКОВО-ВИРОБНИЧИЙ ЦЕНТР СТАНДАРТИЗАЦІЇ, МЕТРОЛОГІЇ, СЕРТИФІКАЦІЇ ТА ЗАХИСТУ ПРАВ СПОЖИВАЧІВ» (ДП «УКРМЕТРЕСТСТАНДАРТ»)</u> , номер призначеного органу з оцінки відповідності <u>UA.TR.001</u> (найменування, ідентифікаційний номер згідно з реєстром призначених органів) виконав роботи з оцінки відповідності за процедурою експертизи типу (Модуль В) (опис виконаних робіт)	
та видав сертифікат експертизи типу № <u>UA.TR.001.0355.30.00694-23</u> від <u>03.08.2023</u> , звіт про оцінювання № <u>907УкрТЕСТ-23</u> від <u>01.08.2023</u>	
8. Версія програмного забезпечення (SW): <u>Не зазначена</u>	
Додаткова інформація: <u>Відсутня</u>	
Підписано від імені та за дорученням: <u>ДЖОН ДІР ГмбХ & Ко. КГ, Інтелігент Солошнс Груп Кайзерслаутерн, Страббургер Аллее 3, 67657, Кайзерслаутерн, Німеччина (JOHN DEERE GmbH & Co. KG, Intelligent Solutions Group Kaiserslautern, Straßburger Allee 3, 67657, Kaiserslautern, Germany)</u>	
Кайзерслаутерн, Німеччина (місце видачі) Manager Business Execution ISG (посада) <u>John Deere GmbH & Co. KG</u> <u>Intelligent Solutions Group</u> М.П. <u>Straßburger Allee 3</u> <u>67657 Kaiserslautern, Germany</u>	03.08.2023 (дата видачі) Thilo Kazimiers (ініціали та прізвище)

Customs Notification (Ukraine only)

To be filled out by the importer or dealer.

Importer or dealer name: _____

Address: _____

Signature: _____

RW00482,0000AFB-19-19MAR21

System Overview

Theory of Operation

Real-time kinematic (RTK) uses stationary base stations to correct global positioning system (GPS) signal for greater accuracy.

John Deere Mobile RTK (M-RTK) signal is an RTK solution that provides RTK-level accuracy over a cellular-based network. A central server links base stations within this network. Machines equipped with John Deere Mobile RTK modem utilize these base station corrections using cellular signal and send them to a StarFire 3000, 6000, 7000, 7500 and integrated receiver.

Since correction data is transferred over a cellular network, it may be available in areas limited by the line-of-sight requirement of traditional RTK radios. As long as the receiver is inside the M-RTK network, receives a big part of the same satellites as the base station, and has adequate cell coverage, M-RTK corrections should be available. There is no need to manually switch base stations inside the network.

RTK-X Theory of Operation

When the machine temporarily loses M-RTK corrections, RTK Extend (RTK-X) provides a correction solution that is similar to M-RTK performance.

The receiver is capable of switching to RTK-X when the following requirements are met:

- RTK-X is enabled.
- The receiver has been operating in RTK signal for at least 1 hour using Mobile RTK corrections from the same base station.
- The receiver is receiving StarFire corrections and Global Navigation Satellite System (GNSS) signal.

The RTK-X solution is calculated by comparing the difference between the M-RTK signal from the base station and the SF-RTK signal at the machine. This calculation creates an offset vector that is used to correct the SF-RTK signal.

- If using John Deere Mobile RTK signal, the offset vector does not change when switching base stations.
- If using a 3rd party M-RTK signal (only available with John Deere Mobile RTK Modem 4G LTE), the offset vector calculation varies between each base station. If the machine connects to a different base, the machine loses its saved offset vector and a new one is calculated. This can take up to several minutes.

Once the offset vector is saved, RTK-X is available if the M-RTK signal is lost:

- StarFire 3000 Receiver: for 15 minutes. After 15 minutes of RTK-X, the receiver shifts to SF2 Fallback for 14 days (needs to be activated in the StarFire setup menu). At the end of 14 days, the receiver

transitions to Wide Area Augmentation System (WAAS), European Geostationary Navigation Overlay Service (EGNOS), or None.

- StarFire 6000, 7000, 7500, and Integrated Receiver: for up to 14 days. After 14 days, the position mode transitions to WAAS, EGNOS, or 3D-None.

When the machine reconnects to a base station and a new offset vector is saved, the 14-day timer resets and RTK-X or SF2 Fallback is available for another 14 days.

To view RTK-X availability from the StarFire pages, select the Diagnostics, Reading, and then RTK-X from the drop-down menu.

- RTK-X Not Ready: If the RTK signal is lost, the receiver reverts to WAAS, EGNOS, or None.
- RTK-X Available: If the RTK signal is lost, RTK-X is available, but an offset vector is not yet saved. If you cycle power or experience significant shading before 1 hour elapses, RTK-X will no longer be available, and the position mode transitions to WAAS, EGNOS, or None, unless the machine reconnects to a base station.
- RTK-X Ready: If the RTK signal is lost, RTK-X is available for up to 14 days. After 14 days, the position mode transitions to WAAS, EGNOS, or None, unless the machine reconnects to a base station. Once connected to a base station and the offset vector is saved, the 14-day timer resets and RTK-X is available for another 14 days.

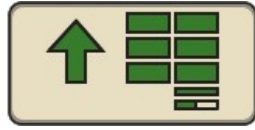
bvwmst,1671032635368-19-19NOV23

John Deere Mobile RTK Requirements

- GreenStar 3, Generation 4, or Generation 5 Display with AutoTrac activation
- One of the following StarFire Receivers:
 - StarFire 3000 Receiver with SF2 Ready activation, RTK Ready activation
 - StarFire 6000 Universal or Integrated Receiver with SF3 Ready activation, RTK Ready activation
 - StarFire 7000 or 7500 Universal or Integrated Receiver with RTK activation
- John Deere Mobile RTK Modem 4G LTE
- Cellular network provider (third-party provider)
- RTK correction data provider:
 - John Deere Mobile RTK access licenseor
 - Third-Party provider RTK correction signal

bvwmst,1676451791549-19-19NOV23

Navigate to StarFire Main Page Using GreenStar 2 and GreenStar 3 Displays



PC582158—UN—01AUG23

Menu

1. Select the Menu.



APY80289—UN—14DEC22

StarFire 7000



PC27932—UN—27APR20

StarFire 6000 Integrated

NOTE: The StarFire button or softkey may look different based on the receiver model connected.

(For more information, reference the StarFire Receiver Operator's Manual.)

2. Select the StarFire.



PC27934—UN—27APR20

StarFire 6000



PC27933—UN—27APR20

StarFire 6000 Integrated

3. Select the StarFire.

bvmsit,1676451791373-19-13OCT23

Navigate to StarFire Main Page Using Generation 4 or 5 Displays



PC28688—UN—25AUG22

Menu

1. Select the Menu.
2. Select the Applications.



PC28798—UN—29AUG22

StarFire Application

3. Select the StarFire application.
4. Select the receiver.

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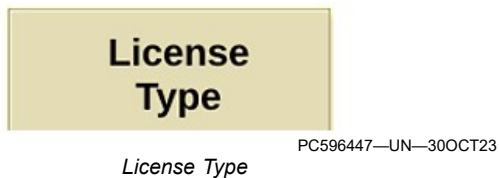
Activations

Mobile RTK is only available when real-time kinematic (RTK) has been activated and a mobile RTK license code has been entered. Activations displays activations and subscriptions for the receiver.

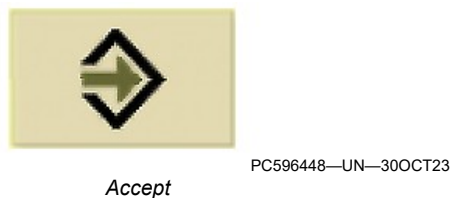
(For more information on activations and subscriptions, reference the StarFire Receiver Operator's Manual.)

To enter a new activation:

1. Navigate to StarFire Main page.



2. Select the License Type.
3. Select the License.
4. Enter the License.



5. Select the Accept.

(Reference the StarFire Receiver Operator's Manual for more information on activations and licenses.)

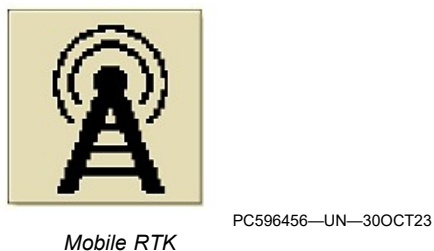
bvvmsit,1676451791448-19-30OCT23

Mobile RTK

Mobile RTK is shown on the StarFire Main page only when real-time kinematic (RTK) has been activated and a mobile RTK license code has been entered.

To navigate to the Mobile RTK page:

1. Navigate to StarFire Main page.



2. Select the Mobile RTK.

bvvmsit,1676451791651-19-30OCT23

Cellular Network and RTK Correction Data Providers

NOTE: The overall performance of the John Deere Mobile RTK system depends on the third-party cellular provider and the third-party real-time kinematic (RTK) correction data provider. John Deere cannot guarantee the functionality of the Mobile RTK system because of limited cellular coverage in some regions or network issues of the RTK data provider.

For more information, use John Deere Mobile RTK Setup Data Checklist.

For best performance and accuracy, John Deere recommends not moving beyond the 20 km (12 mi) radius from a single base station.

NOTE: Third-party providers use subscriber identity module (SIM) cards to offer service and subscription contracts. To avoid additional costs through third-party purchases such as games, ringtones, and applications, contact your cellular provider and block third-party purchases.

Cellular Network Provider

Machine to Machine (M2M) SIM cards do virtual roaming, which could lead to continuous switching between cellular networks. Disconnections occur when the modem is forced to dial in to a different cellular network and each redialing attempt takes time. Where stable connections are needed, use other SIM cards besides the M2M SIM cards for the mobile RTK modem.

The choice of the cellular network provider is up to the operator.

To operate the John Deere Mobile RTK system, the cellular network provider must comply with the following:

- The modem is compatible with the mini-SIM format only.

NOTE: The SIM card is not provided with the John Deere Mobile RTK Modem.

John Deere does not recommend using a low-cost, reseller, or pre-paid SIM cards.

- Provider supports virtual private network (VPN).
- Modem supports 2G, 3G, and 4G cellular technology.
- SIM card must be able to receive and send short message service (SMS).
- Mobile data flat rate with a minimum of 2 GB per month data volume is recommended for RTK operation.

- To avoid roaming costs, check with your provider and roaming partners about the roaming conditions for the SIM card contract.

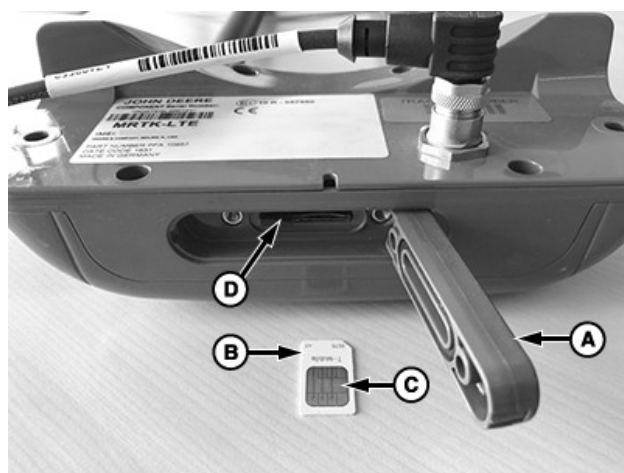
RTK Correction Data Provider

NOTE: Verify with the RTK correction data provider that RTK correction signal is available in your area. As long as the receiver is inside the mobile RTK network and has adequate cell coverage, mobile RTK corrections must be available. There is no need to switch base stations inside the network.

The choice of the RTK correction data provider is up to the operator.

To operate the John Deere Mobile RTK system, RTK correction data provider must comply with data format Radio Technical Commission for Maritime Services (RTCM) 2.3, 3.0, 3.1, and compact measurement record (CMR) to comply with the StarFire Receiver.

Insert SIM Card



PC26752—UN—13FEB19

- A—SIM Card Door
- B—SIM Card
- C—Chip
- D—Opening

1. The SIM card door (A) opens to the right-hand side of the modem.
2. Insert the SIM card (B) into the opening (D) with the chip (C) facing up.
3. Move the black slider to latch the SIM card (B).
4. Close the SIM card door (A).

bvmsit,1736925000704-19-15JAN25

John Deere Mobile RTK Modem 4G LTE Setup Data Checklist

John Deere Mobile RTK Modem 4G LTE Setup Data Checklist	
Cell Phone Provider Information	
SIM card 2G, 3G, or 4G compatible? (Yes required for John Deere Mobile RTK) YES: ☐ NO: ☐	SIM Phone Number:
SIM card able to send and accept SMS? (Yes required for John Deere Mobile RTK) YES: ☐ NO: ☐	
Virtual Private Network (VPN) available? It is required for John Deere Mobile RTK	
Provider Name: (for example, Vodafone, T-Mobile or others)	
**Web page: (for example, www.vodafone.de, www.t-mobile.com or others)	
*Gateway or Access Point Name (APN): (for example, web.vodafone.de, internet.t-d1.de or others)	
*User ID: (for example, wapuser or t-d1)	
*Password: (for example, gprs or guest)	
RTK Correction Data Provider Information	
Provider Name: (for example, John Deere or Sapos)	
**Web page: (for example, http://smartnet.leica-geosystems.eu)	
*Host/Server IP/URL Address: (for example, 141.91.150.73 or de.jdmrtk.com)	
*Host/Server Port: (for example, 2101 or 9101)	
*Mount Point: (for example, 1033_RTK-CMR or jdmrtk3)	
**Correction Type: (for example, RTCM2.3, RTCM3.0, RTCM3.1, or CMR)	
*User ID: (for example, JohnSmith)	
*Password: (for example, 12345678 or ad12cd34ef56)	

NOTE: The checklist helps to get all information from subscriber identity module (SIM) card (cell phone provider) and real time kinematic (RTK) correction data provider required for the modem configuration.

*NOTE: * required data for modem configuration.*

*** optional.*

Password cannot include ";" or ":" or any other special characters.

bvvmsit,1676451791576-19-15FEB23

Setting Up—John Deere Mobile RTK

Mobile RTK Page

PC596449—UN—30OCT23

- A—Correction Type Drop-Down Menu
- B—Corrections Age
- C—Signal Strength
- D—Read
- E—Data Received (kB)
- F—Connection Duration (hr)
- G—Configure

System Status M-RTK Correction:

- **Correction Type (A):**
Operator must select one of the following (RTK) correction sources from the drop-down menu (A):
 - Off
 - RTCM
 - CMR
 - JD Mobile RTK Signal
- **Corrections Age (B):** Indicates mobile RTK correction data stream during maximum correction message age (MCMA). Time is measured from when a signal is transmitted to the time the signal is received.
- **Signal Strength (C):** Indicates cellular signal strength of current location.

NOTE: Selecting Read (D) interrupts the mobile RTK connection for up to 1 minute. Do not use this function while AutoTrac is engaged.

Mobile RTK reconnects automatically after signal strength has been measured.

- **Data Received (kB) (E):** Indicates total kilobytes (kB) of data received. Calculation starts once connection is accepted and used by receiver. Data counts up continuously in M-RTK position mode.
- **Connection Duration (hr) (F):** Indicates duration in hours (hr) of connection. Calculation starts once connection is accepted and used by receiver.

NOTE: If correction messages are not recognized or received for more than MCMA (maximum correction message age), data received and connection duration totals do not accumulate.

RTK Port Configuration:

- Select Configure (G) to set up Modem and Network.

bvmsit,1676452094913-19-15JAN25

Modem/Network Configuration

PC28475—UN—20MAY21

- A—Modem Settings
- B—Type Drop-Down Menu
- C—Profile Drop-Down Menu
- D—Edit Profile Name
- E—Retrieve Modem Settings
- F—Profile Clear
- G—Gateway Settings
- H—APN (access point name)
- I—User ID
- J—Password
- K—Enter PIN Code
- L—Edit Login Information
- M—Next Page
- N—Accept

Modem Settings (A): Defines the modem profile.

- **Type Drop-Down Menu (B):** Defines the modem type. Select Off, Mobile RTK Modem, or JD Mobile RTK Signal (if available) from the drop-down menu.
- **Profile Drop-Down Menu (C):** Defines up to four profile names that are stored on the StarFire receiver. The current profile is stored on the SIM card. Select the profile from the drop-down menu.
- **Edit Profile Name (D):** Select Edit Profile Name to input a profile name.

NOTE: Select the Retrieve Modem Settings (E) before editing settings.

- **Retrieve Modem Settings (E):** Select Retrieve Modem Settings to retrieve the modem settings when selecting another profile. The relevant gateway and correction data settings are recalled.
- **Profile Clear (F):** Select Profile Clear to display Profile Clear page and delete active profiles. To clear the profile, user confirmation is required.

Gateway Settings (G): Shows cellular provider information.

NOTE: Cellular provider and third party mobile RTK correction data provider information are not provided by John Deere.

The operator is responsible to select the cellular provider and the mobile RTK correction provider.

- **APN (H):** Input access point name (APN) provided by cellular provider (for example, web.vodafone.de or internet.t-d1.de). If APN is greyed out, the SIM PIN code needs to be entered.
- **User ID (I):** Displays user identifier (for example, wapuser or t-d1).
- **Password (J):** Displays hidden password characters as asterisks (****).
- **Enter PIN Code (K):** If a product identification number (PIN) code is active, select the Enter PIN Code to enter the subscriber identity module (SIM) card's personal identification number (PIN).
- **Edit Login Information (L):** Select the Edit Login Information to display the Gateway Login Information page for the cellular provider.

Select the Next Page (M) to access the Modem/Network Configuration page 2/2.

Select the Accept (N) to save settings and go back to the Mobile RTK page.

Profile Clear Page

ZX334219—UN—18OCT17

A—Yes
B—No

Select the Yes (A) to clear the profile or select the No (B) to cancel. Return to the Modem/Network Configuration page.

Gateway Login Information Page

ZX329070—UN—04OCT17

A—User ID
B—Password
C—Accept

1. Enter the User ID (A) and Password (B) provided by the cellular provider.
2. Select the Accept (C) to go back to the Modem/Network Configuration page 1/2.

Modem/Network Configuration Page 2/2

ZX329071—UN—04OCT17

A—Profile
B—Correction Data Settings
C—IP/URL
D—Port
E—Mountpoint
F—User ID
G—Password
H—Edit Login Information
I—Accept

Profile (A): Shows the modem profile name.

Correction Data Settings (B): Defines the correction data provider information.

- **IP/URL (C):** Enter the domain name provided by the correction data provider (for example, 141.91.150.73 or de.jdmrtk.com).
- **Port (D):** Enter the port number provided by the correction data provider (for example, 2101 or 9101).
- **Mountpoint (E):** Enter the virtual reference station provided by the correction data provider (for example, 1033_RTK-CMR or jdmrtk3).
- **User ID (F):** Displays the user identifier (for example, JohnSmith).
- **Password (G):** Displays the hidden password characters as asterisks (****).
- **Edit Login Information (H):** Select Edit Login Information to display the Gateway Login Information page for the correction data provider.

Select the Accept (I) to save the settings and go back to the Mobile RTK page.

Gateway Login Information Page

ZX329070—UN—04OCT17

A—User ID
B—Password
C—Accept

1. Enter the User ID (A) and Password (B) provided by the cellular provider.
2. Select the Accept (C) to go back to the Modem/ Network Configuration page 2/2.

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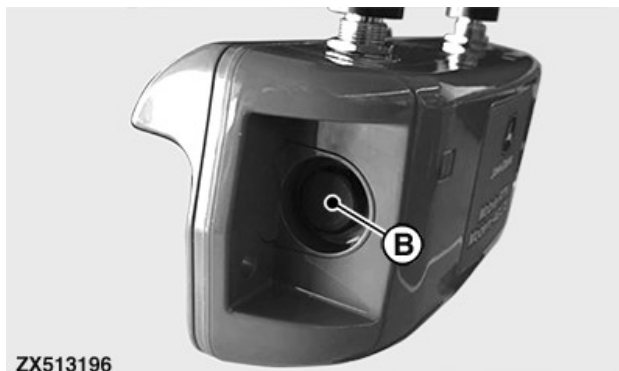
Setting Up—Using Ethernet Connection to Configure Mobile RTK Modem

Connect Mobile RTK Modem 4G LTE to Personal Computer



ZX513195

ZX513195—UN—21JUN21



ZX513196

ZX513196—UN—21JUN21



APY80290—UN—15DEC22

Ethernet Port

A—Ethernet Port
B—Plug
C—Ethernet Cable

The modem has the Ethernet port (A) on the right-hand side. The Ethernet port (A) is the connection with the Ethernet cable (C) (PFP16262) to the computer. With the Ethernet cable (C), the modem can be configured and troubleshoot using the modem web interface, <https://jdmrkt.modem>.

IMPORTANT: Do not remove the plug (B) on the left-hand side of the modem. The plug contains a membrane to allow heat and moisture to escape the radio housing. Warranty void if the plug (B) is removed.

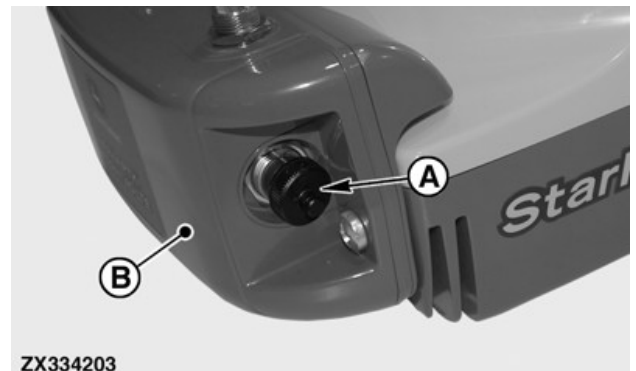
The Ethernet cable (C) is an optional attachment.

Connecting the 4G LTE mobile RTK modem to a personal computer using the Ethernet cable (C) allows the operator to set up the SIM card and the RTK correction provider. It also provides troubleshooting options to diagnose the modem.

NOTE: To use the Ethernet cable, it is not necessary to remove the mobile RTK modem from the back of the StarFire Receiver.

Contact your John Deere dealer or other service provider to order the Ethernet cable.

To connect the Ethernet cable to the Ethernet port of a personal computer:



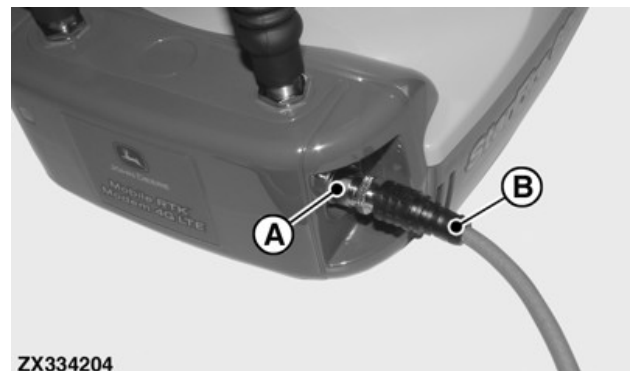
ZX334203

ZX334203—UN—13OCT17

Ethernet Cable M12 to RJ45

A—Cap
B—Mobile RTK Modem

1. Remove the cap (A) from the connector on the side of the mobile RTK modem (B).



ZX334204

ZX334204—UN—13OCT17

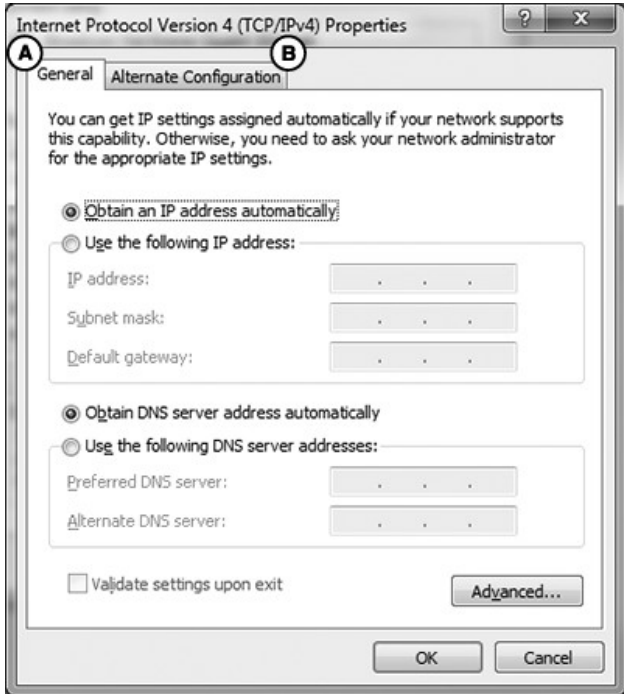
Ethernet Cable M12 to RJ45

A—Connector (M12)
B—Ethernet Cable

2. Connect the matching connector (A) of Ethernet cable (B) to the mobile RTK modem.
3. Connect the Ethernet cable to an Ethernet port on the personal computer.

While connecting the mobile RTK modem to the personal computer, a "Set Network Location" window

can pop up. If this is the case, select “Home Network.”



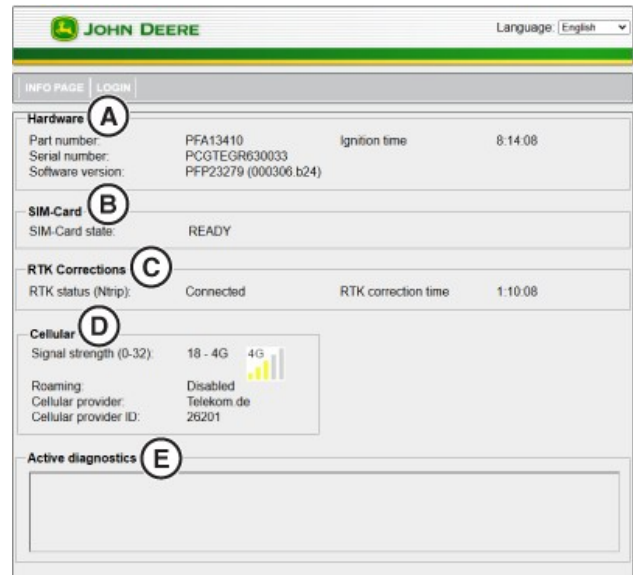
TCP/IPv4

A—General
B—Alternate Configuration

Open the properties for the local area network (LAN) and then open the properties for Internet Protocol Version 4 (TCP/IPv4). On both the General (A) and the Alternate Configuration (B), ensure that all settings are set to automatic.

NOTE: Disable the wireless connection of the personal computer so that only the LAN connection (Ethernet port) is active. Avoid parallel use.

- Wait until the LED located behind the mobile RTK modem is blinking green or is a steady green.



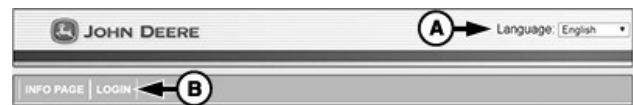
APY80344R—UN—15JAN25

Information Page

A—Hardware
B—SIM Card
C—RTK Corrections
D—Cellular
E—Active Diagnostics

- Open an internet browser (for example, Internet Explorer, Chrome, Firefox) and enter the address:
<https://jdmrtk.modem>

The information page displays the details about the mobile RTK modem Hardware (A), SIM card (B), RTK Corrections (C), Cellular (D), and Active Diagnostics (E).



PC20447—UN—08MAR19

Info Page Header

A—Language Drop-Down Menu
B—Login Page

- Use the Language drop-down menu (A) to choose the desired language.
- Select Login (B) to set up the mobile RTK modem.



PC20442—UN—08MAR19

Login

A—User
B—Password
C—Apply

- Enter the login information for the mobile RTK modem. To log in for the first time, enter:

- User (A) — “customer”
- Password (B) — “JDCLI2016”

After the first login, a new password is required. Enter a new password, repeat the password and select the Apply. The new password must be different than JDCLI2016.

NOTE: The password is case-sensitive and must be changed after the first login.

Select the Apply (C).

The screenshot shows the 'Main Page Modem Information'. It has two main sections: 'Modem' and 'Cellular'. The 'Modem' section lists: Part number: PFA13410, Serial number: PCGTGR630033, Software version: 000306.b26, IMEI: 350588287532931, IMSI: 262011902851727, Ignition time: 8:38:21, and RTK correction time: 1:31:38. The 'Cellular' section lists: Signal strength (0-32): 18 - 4G, SIM-Card state: READY, Phone number: +491711757959, Cellular provider: Telekom.de, Cellular provider ID: 26201, WAN IP: 10.80.73.159, Roaming: disabled, and RTK status (Ntrip): Connected. Below these is a green dot and 'Wan connected'. There is also an 'Active diagnostics' section. On the left, there is a sidebar with four options: 'SETUP' (A), 'DIAGNOSTIC' (B), 'ADMINISTRATION' (C), and 'TERMS OF USE' (D).

APY80345R—UN—15JAN25

Main Page Modem Information

- A—Setup
- B—Diagnostic
- C—Administration
- D—Terms of Use

The main page displays the information for the mobile RTK modem.

Select the Setup (A) to configure the SIM card, RTK corrections, and Ethernet. Select the Diagnostic (B) to perform a dial-in test or generate a system log. Select the Administration (C) to manage users and passwords, reboot RTK modem, or perform a factory reset. Select the Terms of Use (D) to read the license agreement and Third-Party OSS notices.



Power Button (log off)

PC20445—UN—11MAR19

To log off, select the power button.

bvmsit,1671083009300-19-09SEP25

Configure Mobile RTK Modem



Quick Help

PC20450—UN—11MAR19

Select the Quick Help for a short explanation of each setting.

The screenshot shows the 'Setup' menu. At the top is the 'SETUP' header (A). Below it are three main options: 'SIM-Card' (B), 'RTK Corrections' (C), and 'Ethernet' (D). Below these are three more options: 'DIAGNOSTIC', 'ADMINISTRATION', and 'TERMS OF USE'.

APY80346—UN—16FEB23

Setup

- A—Setup
- B—SIM Card
- C—RTK Corrections
- D—Ethernet

After selecting the Setup (A), select the SIM Card (B), RTK Corrections (C), and Ethernet (D) to configure the mobile RTK modem.

SIM Card

The screenshot shows the 'SIM PIN' configuration page. It has a 'SIM PIN' header. Below it, 'PIN status' is 'Active'. There are two input fields: 'PIN code' (A) with the value '2204' and 'Deactivate PIN'. To the right of the 'PIN code' field is an 'Apply' button (B). To the right of the 'Deactivate PIN' field is a 'Deactivate PIN' button. There are also green and red checkmarks and a blue globe icon next to the buttons.

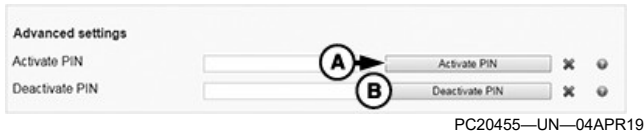
APY80291—UN—15DEC22

SIM PIN

- A—PIN Code
- B—Apply

PIN Status shows if a SIM PIN is active. The SIM PIN can be activated and deactivated. It's recommended to have the SIM PIN deactivated for MRTK operation.

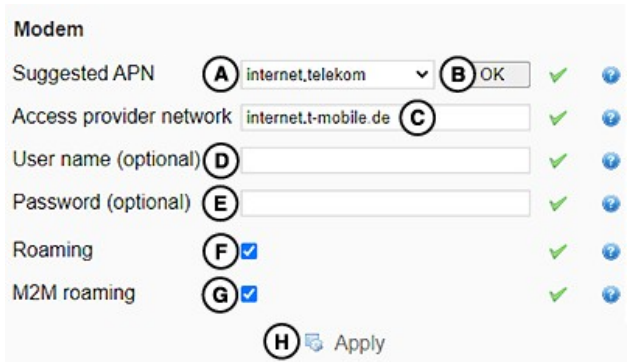
1. If the SIM card is locked, enter the SIM card PIN code (A).
2. Select the Apply (B).



Advanced Settings

A—Activate PIN
B—Deactivate PIN

3. To activate SIM card protection, enter a PIN code and select the Activate PIN (A).
4. To deactivate SIM card protection, enter the active PIN code and select the Deactivate PIN (B).



SIM PIN Settings

A—Suggested APN
B—OK
C—Access Provider Network
D—User Name
E—Password
F—Roaming
G—M2M Roaming
H—Apply

5. Select the desired access provider network (APN) from the Suggested APN (A) drop-down menu. Select the OK (B) to automatically populate the Access provider network (C), user name (D), and password (E) values.

NOTE: To avoid roaming costs, check with your provider and roaming partners for the roaming conditions of the SIM card.

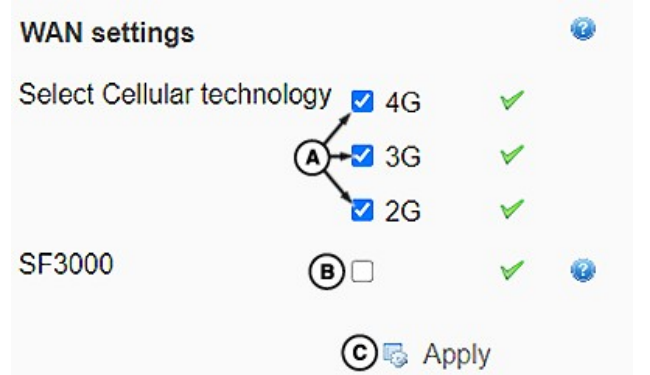
6. Select the Roaming (F) activation checkbox to automatically connect to a roaming network.
7. Select M2M roaming (G) if a Machine-to-Machine (M2M) SIM card is used. It roams to multiple cellular networks and it is not fixed to one cellular network.

M2M reliability depends on the cellular network provider.

Do not use M2M SIM card and M2M roaming if there are performance issues.

NOTE: M2M SIM card can cause performance issues like many RTK-X times or long dial-in time, depending on the SIM card provider and their roaming conditions.

8. Select the Apply (H).



WAN Settings

A—Allowed Generation Checkbox
B—SF3000 Checkbox
C—Apply

9. Select the allowed cellular network generations (A). All generations are downward compatible, so it is recommended to select all.

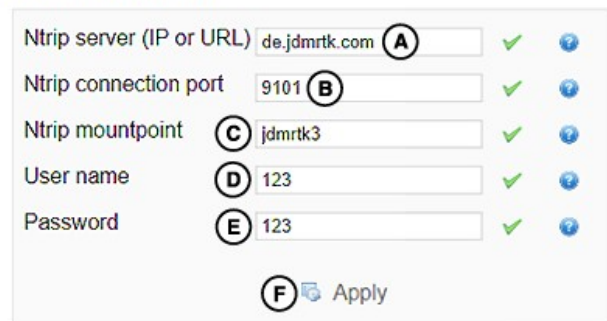
NOTE: If there are no signal issues, do not select the SF3000 checkbox (B).

10. Select the SF3000 checkbox if there are connection problems or signal issues with the StarFire 3000 Receiver.

11. Select the Apply (C).

RTK Corrections

RTK settings (Ntrip)



Ntrip

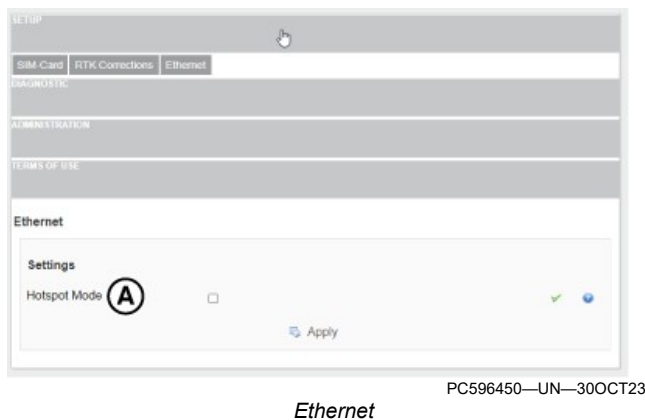
A—Ntrip Server (IP or URL)
B—Ntrip Connection Port
C—Ntrip Mountpoint
D—User Name
E—Password
F—Apply

1. Enter the address of the Ntrip server (A).
2. Enter the Ntrip connection port (B) to connect to the server.
3. Enter the Ntrip mountpoint (C).

NOTE: RTK settings are provided by the RTK correction signal provider. Depending on the server, User name (D) and Password (E) are optional.

4. Enter User name (D) required to access the ntrip table.
5. Enter Password (E).
6. Select the Apply (F).

SETUP—Ethernet



A—Hotspot Mode

The Hotspot Mode (A) enables the modem for internet access using the Ethernet port.

bvmsit,1671083009465-19-30OCT23

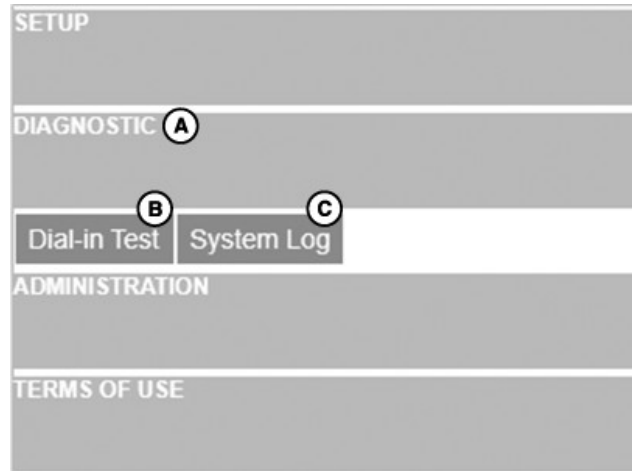
Diagnostics



Quick Help

PC20450—UN—11MAR19

Select the Quick Help for a short explanation of each setting.



PC28480—UN—15JUN21

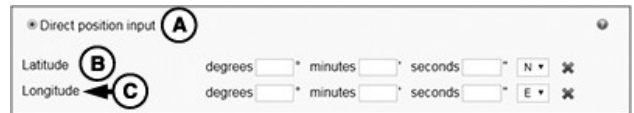
- A—Diagnostic
- B—Dial-In Test
- C—System Log

After selecting the Diagnostic (A), select the Dial-in Test (B), and System Log (C) to troubleshoot problems with the modem.

Dial-In Test

Perform a dial-in test to check the modem network connection.

1. Select the GPS method to use during the test.

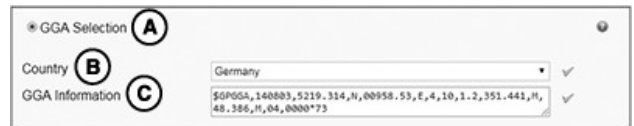


PC20461—UN—12MAR19

- A—Direct Position Input
- B—Latitude
- C—Longitude

NOTE: The StarFire Receiver can be used to determine the latitude and longitude coordinates.

Select Direct Position Input (A) to enter a set of Latitude (B) and Longitude (C) coordinates to use during the test.



PC20462—UN—12MAR19

- A—GGA Selection
- B—Country Drop-Down Menu
- C—GGA Information

Select GGA Selection (A) to simulate a GPS position at the center of the country chosen in the Country drop-down menu (B). The GGA Information (C) displays the NMEA message structure.

PC20463—UN—12MAR19

- A—Start/Stop**
B—Test Indicator
C—NMEA Data
D—Download NTRIP Log File

NOTE: The dial-in test uses data that can cost the user. Stop the test before closing the page. Data continues to be used even after leaving the page.

- After the GPS method is determined, select the Start/Stop (A) to begin the test.
- The test indicator (B) displays green when valid NMEA data (C) is received.

NOTE: Data does not immediately appear in the NMEA data window.

If no valid data is received, the test indicator displays red.

NOTE: If indicator stays red, refer to *Troubleshooting—John Deere Mobile RTK Modem 4G LTE in Troubleshooting section*.

- Select the Download NTRIP Log File (D) to save the NMEA data on the personal computer.

System Log

Messages generated by the mobile RTK modem are displayed in the system log.

PC20464—UN—12MAR19

- A—Category Drop-Down Menu**
B—Search Term
C—Apply Filter
D—Cancel Filter
E—Download Log File

- To filter messages, select a category (A) from the drop-down menu and then enter a search term (B). Select the Apply Filter (C) to view the messages that meet the criteria.
- Select the Cancel Filter (D) to clear the search criteria.
- Select the Download Log File (E) to save a file named "log.export.txt."

bvwmst,1676475345856-19-13OCT23

Administration



Quick Help

PC20450—UN—11MAR19

Select the Quick Help for a short explanation of each setting.

PC26902—UN—18MAR19

Administration

- A—Administration
- B—Users and Password
- C—Reboot
- D—Factory Reset

After selecting the Administration (A), select the Users and Password (B), Reboot (C), and Factory Reset (D).

Users and Password

Users List

PC20466—UN—12MAR19

- A—Category Drop-Down Menu
- B—Search Term
- C—Apply Filter
- D—Cancel Filter
- E—Enable Checkbox
- F—Remove Checkbox
- G—Apply Changes

1. To filter users, select a category (A) from the drop-down menu and then enter a search term (B). Select the Apply Filter (C) to view the users that meet the criteria.

2. Select the Cancel Filter (D) to clear the search criteria.

NOTE: The current user can only modify users with a lower level.

- 3. Each user can be individually enabled or disabled. Select Enable checkbox (E) to enable a user.
- 4. Each user can be individually removed from the list. Select Remove checkbox (F) to remove a user.
- 5. After changes have been made, select the Apply Changes (G).

Add New User

PC20467—UN—12MAR19

- A—Name
- B—Level Drop-Down Menu
- C—Password
- D—Comment
- E—Apply

- 1. To add a new user, enter the user name (A).
- 2. Select the user level (B) from the drop-down menu.

- 3. Enter the password (C).
- 4. If necessary, enter a comment (D) for the user.
- 5. Select the Apply (E) to add the new user.

Change Password

PC20468—UN—12MAR19

- A—Old Password
- B—New Password
- C—Apply

- 1. To change the password for the user that is currently logged in, enter the old password (A).
- 2. Enter the new password and confirm the password (B).
- 3. Select the Apply (C) to save the new password.

Reboot

Reboot

PC20471—UN—12MAR19

- A—Reboot Now

NOTE: Do not interrupt power while the modem reboots.

- 1. Select the Reboot Now (A) to reboot the modem and refresh the modem pages.
- 2. The reboot take a few minutes. Wait before checking the other modem page.

Factory Reset and SIM Configuration Reset

Factory Reset

Reset to factory configuration

SIM configuration reset

SIM Configuration Clean-Up

APY80295—UN—15DEC22
Factory Reset and SIM Configuration Reset

A—Reset to Factory Configuration
B—SIM Configuration Clean-Up

NOTE: Do not interrupt power during the factory reset.

The factory reset deletes all existing modem settings.

1. Select the Reset to Factory Configuration (A) to perform a factory reset.

NOTE: The SIM configuration reset deletes the current SIM setup information. The SIM card must be configured again.

2. Select the SIM Configuration Clean-Up (B) to reset the SIM configuration.

bvvmsit,1671083009646-19-15JAN25

Terms of Use



PC20474—UN—12MAR19

A—Terms of Use
B—License Agreement
C—Third-Party OSS Notices

After selecting the Terms of Use (A), select the License Agreement (B) and Third-Party OSS Notices (C).

CZ76372,00007C2-19-13OCT23

Observable Symptom

Electromagnetic Interference (EMI)

EMI can disrupt or overload the communication circuits of the computer and monitor system, causing erratic display activity. Severe cases result in a complete system shutdown.

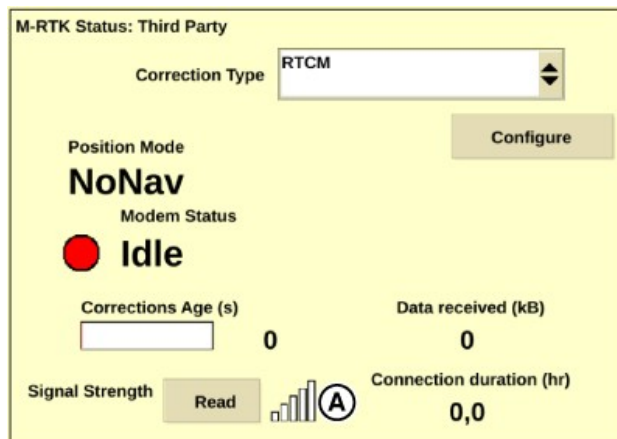
Common causes of EMI include:

- Operating close to high tension wires and broadcast towers
- Noisy power supply
- Monitor too close to the radio antenna
- Old radio cables used
- Poor system ground
- Monitor power not directly connected to battery
- Radio power not directly connected to battery
- Monitor wiring harness too close to radio wiring
- Monitor not connected to on-board computer with the standard system cables

To overcome problems before replacing monitor, check causes of EMI and take corrective measures.

OUC002,0005559-19-03OCT17

Modem Not Responding



PC596451—UN—30OCT23



PC596452—UN—30OCT23

Modem Not Responding

A—Signal Strength Bar

If a signal strength bar displays an exclamation point, the modem timed out. If the modem times out for longer than 180 seconds, a Modem Not Responding message displays.

Possible causes are:

- There is no subscriber identity module (SIM) card in modem.
- There is no cellular network available.
- There is a bad modem connection or harness failure.
- The modem is busy (for example, while transmitting data).

OUC002,000555A-19-30OCT23

Tool—How To

Health Tab

Select the drop-down menu to see ISOBUS Selection List.

- **System Performance:** A general look at the health of the StarFire receiver.
- **Position Dilution of Precision (PDOP):** A combination of vertical and horizontal error (three dimensional).
 - Poor value: > 4
 - Marginal value: 2—4
 - Normal value: < 2
- **Satellites Used:** The number of satellites the receiver uses in the current position solution. Satellites are not used in the solution until they are above the 5° elevation mask for WAAS/EGNOS, SF1, or SF-RTK. Satellites are used until they drop below the 5° elevation mask for WAAS/EGNOS, SF1, or SF-RTK.
 - Poor value: < 8
 - Marginal value: 8—20
 - Normal value: > 20
- **GNSS Signal (%):** Shows the receiver health condition about GNSS signal (%).
- **Differential Mode:** A display of the level of differential signal received over the past 60 minutes. Level of signal purchased on the receiver determines the highest point on the bar graph.
- **SF Signal Quality:** The strength of the StarFire network signal (SF-RTK or SF1).
 - Poor value: < 5
 - Normal value: ≥ 5
- **GPS Accuracy:** A relative indication of overall differential GNSS performance.
 - Poor value: < 80
 - Marginal value: 80—90
 - Normal value: 100
- **High AGC:** High automatic gain control (AGC) is a voltage-controlled amplifier that amplifies or lowers the volume of the received signal for high-band frequencies.
 - Normal value: 15—30 dB
- **Low AGC:** Low automatic gain control (AGC) is a voltage-controlled amplifier that amplifies or lowers the volume of the received signal for low-band frequencies.
 - Normal value: 15—35 dB

bvmsit,1698664586421-19-15JAN25

Mobile RTK Modem 4G LTE Diagnostic Messages

Diagnostic messages (DM) are available on the modem

web page for the Mobile Real Time Kinematics (RTK) 4G Long-Term Evolution (LTE) modem, PFA12676 (software version 306b19 or higher) and PFA10857 (software version 306b4.5 or higher). Diagnostic Messages are only displayed as long as they are active, but tracked or logged in the log file. In the log file from the modem, the DM message is available and shown.

Example: “dm; 19-03-2022 08:30:13;5 SIM card error (not initialized or not detected)”

With the StarFire 7000 and 7500, the Mobile RTK modem PFA12676 and newer is able to show the diagnostic messages on the Mobile RTK main page in the user interface.

The screenshot shows a web interface with a top navigation bar containing 'INFO PAGE' and 'LOGIN'. The main content area is divided into several sections: 'Hardware' (Part number: Unknown, Serial number: Unknown, Software version: PFP21970 (000306 b17), Ignition time: 3732:00:16), 'SIM-Card' (SIM-Card state: ERROR), 'RTK Corrections' (RTK status (Ntrip): Standby, RTK correction time: 3329:30:59), 'Cellular' (Signal strength (0-32): unknown, Roaming: Enabled, Cellular provider: Vodafone.de, Cellular provider ID: 26202), and 'Active diagnostics' (11-15-2021 11:19:11 DM 5 SIM card error (not initialized or not detected)). A circled 'A' is placed next to the active diagnostic message.

APY80347—UN—16FEB23

Web Page User Interface

The screenshot shows a web interface titled 'M-RTK Status: Third Party'. It features a 'Correction Type' dropdown menu set to 'RTCM' and a 'Configure' button. Below this, the 'Position Mode' is 'NoNav' and the 'Modem Status' is 'Idle' (indicated by a red circle). There are two progress bars: 'Corrections Age (s)' with a value of 0 and 'Data received (kB)' with a value of 4. A 'Signal Strength' bar is also present with a 'Read' button. The 'Connection duration (hr)' is 0.0. At the bottom, a message states: 'RTK correction provider login failed. Check correction data settings. RTK correction provider: User ID or Password wrong.' A circled 'A' is placed next to this message.

PC596455—UN—30OCT23

Display User Interface

A—Diagnostic Message

Diagnostic Message Number	Modem Web Page User Interface	StarFire 7000/7500 M-RTK Main Page
1	No GGA ^a Position from GNSS Receiver, empty or corrupt GGA	No GPS Position. Check satellite availability and clear view to the sky.
2	Wrong Baud Rate (not 19200)	NA
3	Need GGA Flag missing	NA
4	Defect harness or interface	NA
5	SIM card error (not initialized or not detected)	SIM card not detected or PIN/PUK error
6	SIM personal identification number (PIN) or SIM PIN unlock key (PUK) error	SIM card PIN/PUK error
7	Modem module not booting	Modem is not starting up and needs to be replaced.
8	No cellular network found	Cellular signal not available
9	No or wrong access point name (APN) settings	Check cellular provider, roaming, or RTK correction provider settings.
10	Modem in start-up call sequence	Check cell, roaming, RTK correction provider or correction data settings. RTK correction provider login failed.
11	Network denied	
12	Roaming flag (and M2M flag) not set; Connection denied	
13	No wide area network internet protocol (WANIP) connection or address	
14	No networked transport of RTCM via internet protocol (NTRIP) settings	RTK correction provider login failed. Check correction data settings. RTK correction provider: User ID or Password wrong.
15	Wrong NTRIP settings	
16	MRTK not selected in GNSS Receiver (unknown commands)	
17	Server Lockup failure	
18	Too many concurrent connections to the NTRIP server with the same account	RTK correction provider: User ID or Password wrong. Mountpoint is not correct.
19	Authentication failure (HTTP 401 error)	
20	No User ID set	
21	No Password set	
22	Wrong Mountpoint (HTTP 404 error)	Mountpoint is not correct.
23	Sourcetable received	
24	Outside of the boundaries of the NTRIP network.	Outside of the boundaries of the NTRIP network.
25	Limited internet connection. Check system log for more information	Limited internet connection. Check system log for more information

^aGGA = Global Positioning System Fix Data, Time, Position and fix related data for a GPS receiver

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Readings

To view RTK readings:



Diagnostics

PC596457—UN—30OCT23

1. Select the Diagnostics.



PC596453R—UN—15JAN25

A—Readings

B—Readings Drop-Down Menu

2. Select the Readings (A).
3. Select information from the drop-down menu (B).

Hardware and Software

- Software Part Number
- Software Version Number
- Hardware Part Number
- Hardware Serial Number

System Voltages

- Unswitched Voltage
- Switched Voltage
- CAN Hi Voltage (vehicle CAN bus)
- CAN Lo Voltage (vehicle CAN bus)

Receiver Status

- Receiver Hours
- Receiver Address
- Quick Start Status
- Primary Antenna
- Secondary Antenna
- Serial NMEA
- Ocean Tide Model
- Boundary Plate Model
- Correction Mode

The following readings only appear when the receiver has a real-time kinematic (RTK) activation.

M-RTK

- MRTK Message
- Diagnostic Message (DM) ♦ if active
- PIN
- Part
- Software
- Base Station Distance
- Solution Type

RTK-X



PC28482—UN—21MAY21

A—Readings

B—Readings Drop-Down Menu

- RTK-X Status
- RTK-X Days Remaining
- StarFire Offset Status
- StarFire Signal
- Last RTK-X Failure Mode
- Time of Last Failure

bvvmisit,1676452783109-19-15JAN25

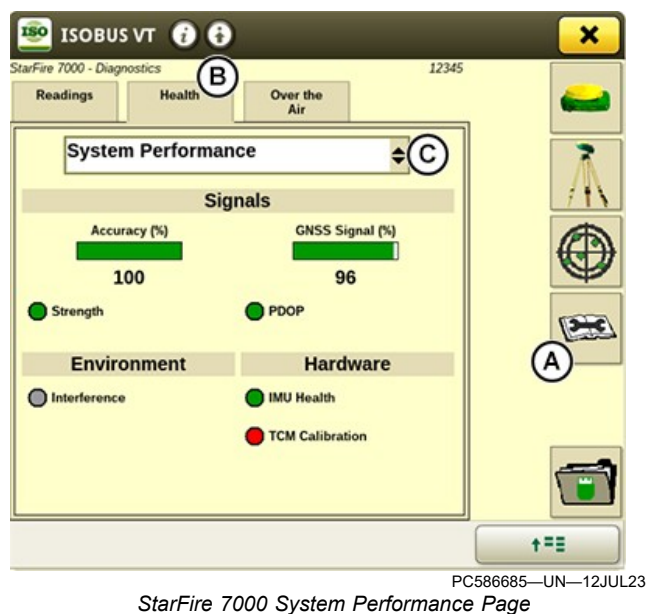
StarFire 7000 System Performance

The system performance selection gives a general look of the overall health of the receiver and may offer a starting point for diagnostics.

1. Select the StarFire 7000 softkey.

NOTE: Refer to the System Overview section in this manual for more information on navigating to StarFire main page.

2. Select the Diagnostics softkey (A).



StarFire 7000 System Performance Page

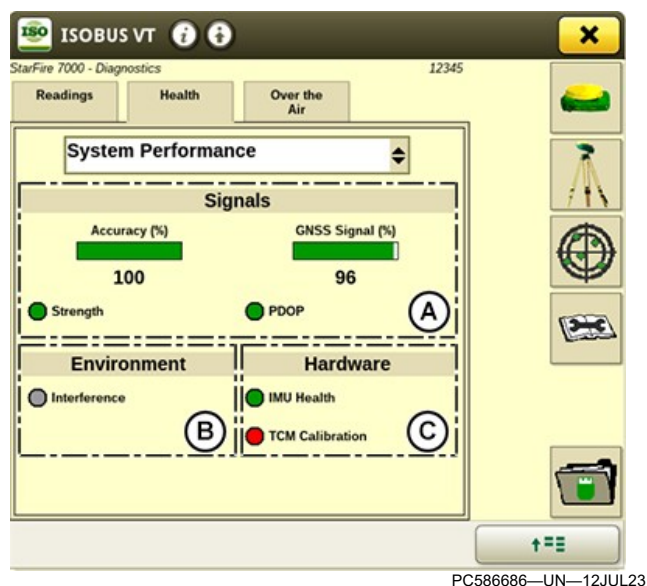
A—Diagnostics Softkey

B—Health Tab

C—ISOBUS Selection List Drop-Down Menu

3. Select the Health tab (B).
4. If System Performance is not listed by default, select the ISOBUS selection list drop-down menu (C) and select System Performance.

Receiver Health



StarFire 7000 Health

A—Signals

B—Environment

C—Hardware

System Performance is organized into three categories:

1. **Signals:** Signals shows the receiver health condition

about accuracy (%), GNSS signal (%), strength, and PDOP.

2. **Environment:** Environment shows the receiver health condition about an environmental interference.
3. **Hardware:** Hardware shows the receiver health condition about the IMU health and TCM Calibration.

In general, receiver health conditions are indicated using four different colors with each color representing the current system performance.

Color of Indicator	System Performance Status
Green	System functioning as expected.
Yellow	Marginal impact to system performance possible.
Red	Severe impact to this system performance likely.
Gray	Default state (in process of determining indicator value).

StarFire 7000 Health Indicators

If the indicators on the StarFire Health page are yellow or red, following are the related indications:

Indicator	Indication
Signal Strength	StarFire satellites signals are not optimal, sky shading could be the source.
PDOP	Satellites geographical distribution is poor, sky shading could be the source.
Interference	Receiver could be underperforming due to interference sources, review Spectrum tab for details.
IMU Health	The receiver has lost terrain compensation. Disconnect and reconnect the receiver power to attempt recovery.
TCM Calibration Error (red light)	No TCM Calibration available or TCM Calibration performance issue. Perform a TCM calibration.
TCM Calibration Error (yellow light)	TCM Calibration is marginal. If poor performance is observed perform a TCM Calibration.
TCM Calibration Initializing (gray light)	Quality indicator initializing.

Troubleshooting steps when health indicators show yellow or red:

- **Signals category (accuracy [%], GNSS signal [%], strength, PDOP)**

Many factors affect the position accuracy. When full accuracy is not achieved within 15 minutes, consider the following possibilities:

- Obstructed view of sky: Trees, buildings, or other structures block the receiver signals from available satellites.
- GNSS signal-to-noise ratio (SNR): Radio interference from 2-way radios or other sources

causes low SNR (check the Satellite Graph softkey).

- Satellite position in sky: Poor satellite geometry can reduce the accuracy (check the Satellite SkyPlot softkey).
- Number of satellites in solution: Total number of satellites the receiver uses to calculate the position (check the Satellite SkyPlot softkey).

- **Environment category (interference)**

Identify the interference source and remove.

- **Hardware category (IMU health)**

Cycle the power. If an issue persists, refer to the StarFire Receiver 7000 Technical Manual.

bvmsit,1698664677225-19-30OCT23

Troubleshooting

Troubleshooting—General Test Procedure

NOTE: John Deere is not responsible for third-party real-time kinematic (RTK) correction data signal quality or cellular coverage of the provider.

- Verify the cellular reception.
- Verify the RTK correction signal quality.
- Verify that the subscriber identification module (SIM) card:
 - Is configured correctly.
 - Has a valid contract.
 - Is inserted in the correct direction into the modem.
 - Shows a deactivated or correctly entered personal identification number (PIN).
 - Can be accessed.
- Check the global positioning system (GPS) signal and satellite availability. Shading and multipathing can cause issues.
(Reference the StarFire Receiver Operator's Manual.)
- Check the hardware for damage and verify the connections. Check:
 - Modem
 - Antennas
 - Harnesses

Try the following to resolve the issue:

- With StarFire 3000 only, deactivate the SF2 fallback to operate with the highest accuracy.
- Use the main SIM card provided by the cellular provider.
- Cellular coverage can vary, depending on weather conditions and cellular provider network setup (use of capacity).

If the issue is still persistent, collect the following information before contacting your John Deere dealer or other service provider:

- Receiver serial number, date code, and software version
- Display serial number, date code, and software version
- Date
- Time of day
- Coordinates where the issue occurred
- Name of the RTK data provider
- Description of issue and any diagnostic trouble codes (for example, low voltage)
- System Log is available on the modem webpage (select the Diagnostic and then select System Log)



PC596454—UN—30OCT23

- A—Solution Type
- B—Base Station Distance
- C—Readings
- D—Readings Drop-Down Menu

NOTE: If the Solution Type (A) is a Single Site, a Base Station Distance (B) of more than 20 km (12 mi) can cause precision issues.

- Base station distance (select the Diagnostics, Readings [C], and then M-RTK from drop-down menu [D])
- Screenshots from:



Mobile RTK

PC596456—UN—30OCT23

- StarFire Mobile RTK page (navigate to the StarFire Main page and select the Mobile RTK)



Diagnostics

PC596457—UN—30OCT23

- StarFire Diagnostics – M-RTK (navigate to the StarFire Main page, select the Diagnostics, Readings, and then M-RTK from the drop-down menu)



Satellites

PC596458—UN—30OCT23

- StarFire – Satellites (navigate to the StarFire Main page and select the Satellites)

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Troubleshooting—John Deere Mobile RTK Modem 4G LTE Diagnostics Using LED



ZX274353

ZX274353—UN—02MAY16

A—LED Window

The front of the mobile RTK modem is equipped with an LED window (A) for status output. This LED indicates the status of the cellular network and correction data.

Power the mobile RTK modem and wait 30 seconds for the modem to fully boot before attempting to troubleshoot or diagnose. To diagnose the mobile RTK modem, use the LED status and the System Status M-RTK Correction display page (see Mobile RTK Page).

Mobile RTK Modem—LED Status Description	
LED	Status
Off	If less than 30 seconds, the modem is booting or rebooting. If more than 30 seconds, the modem has no power or is updating.
Blinking fast in multiple colors	The modem is updating. Do not remove power.
Solid blue	Process started for the mobile RTK.
Blinking blue	Drivers for the mobile RTK loaded.
Blinking yellow	Software started.
Blinking green	Searching or connecting to the internet.
Blinking green/red	No subscriber identity module (SIM) card found or SIM card error. Personal identification number (PIN) or personal unblocking key (PUK) code failed or required. Not connected to the internet. No or wrong access point name (APN) setting.
Blinking red	Modem manager stops and reboots. Check the log file.
Solid green	Connected to wide area network (WAN) (operation mode).

Troubleshooting Mobile RTK:

NOTE: If the modem is still accessible, reset to the factory configuration, reset the SIM configuration, or update the mobile RTK modem software.

Symptom	Problem	Solution
LED does not light up.	A connection is bad.	Check the power and all the connection points.
	Defective hardware.	Replace the modem.
LED is blue or white.	The modem is stuck in boot mode for more than 5 minutes.	Replace the modem.
There is no connection or a bad connection to cellular network.		Check the LED status on the modem or wiring harness.
		Select the Signal Strength Read on the StarFire Mobile RTK page.
	Wrong APN settings entered.	Check the settings for cellular network access.

Symptom	Problem	Solution
	Wrong password entered.	Check the password. The modem does not allow “,” or “:” characters.
	SIM card not activated.	Check the password. The modem does not allow “,” or “:” characters.
	PIN code set.	The PIN code can be set with the Mobile RTK Configurator, 4G LTE webpage, or John Deere display. <i>NOTE: If the modem is still accessible, try to reset to the factory configuration, reset SIM configuration, or update the mobile RTK modem software.</i>
	Wrong PIN code set.	The modem locks the SIM card after three failed attempts to dial in. To unlock the SIM card, the PUK code is required. The PUK code can be entered using the Mobile RTK Configurator or a cellular phone. It is not possible to enter PUK code on the GreenStar Display. The PIN code can be enabled with a cell phone (recommended). If the PUK code is not known, contact the SIM card provider.
	A bad cellular coverage or the APN service interrupts and causes dropouts.	Try another location with known coverage or try another time of day. Select the Signal Strength Read on the StarFire Mobile RTK page.
	The SIM card configuration is wrong.	Reconfigure the SIM card or perform a SIM configuration reset from the modem webpage (select Administration and then select Factory Reset menu).
	The SIM card contract ended.	Renew the contract.
There is no correction data coming in (no RTK accuracy).		Check the LED status on the modem.
	The wrong correction data (NTRIP) settings were entered.	Check the settings for cellular network access.
	The wrong password was entered.	Check the password. The modem does not allow “,” or “:” characters.

Symptom	Problem	Solution
	The correction data stream is not compatible.	Check compatibility of the correction data stream and StarFire Receivers. StarFire Receiver supports Radio Technical Commission for Maritime Services (RTCM) 2.3, 3.0, 3.1, and Compact Measurement Record (CMR) streams.
	Incorrect National Marine Electronics Association (NMEA) message or baud rate was set.	Verify that GGA checkbox for NMEA Message on the Mobile RTK Configuration Page is enabled and baud rate is 19200.
	The correction data provider coverage is bad.	Check with the RTK correction data provider to determine if service is available. Try another location.
	The contract ended.	Renew the contract.
	The contract has not started or is not activated.	Activate or start contract.
	There is no connection to server because all licenses are in use.	Ensure that only one license per modem is in use.
The RTK accuracy is bad (deviation more than 2.5 cm [1 in]).	The RTK baseline depends on the distance between a single base station and the machine receiver.	For single base station streams: As distance between the area of the single base station stream and the machine receiver increases, accuracy of the correction signal decreases. John Deere recommends not exceeding the 20 km (12 mi) radius from the single base station.
	There are issues with the correction data provider (for example, shutdown, maintenance, or changes).	Check with the data correction provider support for issues with the correction data stream.
Modem is not configurable with a StarFire Receiver. The Modem and Network Configure is not available.	The StarFire Receiver has an older version software installed, no MRTK activation, or there is no connection to the modem.	Update the StarFire Receiver to the latest software version. Activate the M-RTK. Check the PINs, connector, and RS232 harness from the receiver and modem.

Symptom	Problem	Solution
Modem does not respond (not accessible through the display).	The baud rate changed and does not match 19200. The actual baud rate is shown in the modem log file. For example: 19200,internet.t-d1.de,td1,***** ,de.jdmrkt.com:9101,jd+pcs161a123456:***** ,MOUNT:jdmrkt3,SKIP-TABLE,NEED-GGA.	Check if the SIM card is inserted correctly in the modem. Connect to the modem webpage using Ethernet cable. Perform a factory and SIM card reset. Select Administration, Factory Reset, Reset to Factory Configuration and Administration, Factory Reset, and then SIM Configuration Clear.

bvmsit,1676454518486-19-15JAN25

Troubleshooting—John Deere Mobile RTK Onboard Diagnostics

Mobile RTK Modem Diagnostic LED Signal and GreenStar Display status:

Symptom	Problem	Solution
Off (no power)	Modem LED not on.	Check connection points, pins in connector, and modem. Check power source and try a different harness. Connect modem to the computer with the Ethernet cable, test connectivity, and login (https://jdmrkt.modem). Test a different modem.
Green/red flashing (no cellular network)	No or wrong PIN code set.	Using GreenStar Display: 1. If Enter PIN Code is active in Gateway Settings, select and enter PIN code. 2. Check Signal Strength Read on StarFire Mobile RTK main page. Using Configuration and Diagnostic Tool: Enter PIN if needed. PIN and PUK codes can be set in the modem web interface (https://jdmrkt.modem.) Check Signal Level in the Connection box.
	No signal strength.	Check the cellular frame on the information page from the modem web interface (https://jdmrkt.modem). Check and replace cellular antennas located on the modem. If needed, switch or exchange LTE antennas (first the right one, looking onto the front label).

Symptom	Problem	Solution
		Using GreenStar Display: 1. Select Retrieve Modem Settings on Modem / Network Configuration page. Verify Gateway Settings: APN, User ID, and Password. 2. Use modem SIM card in a smartphone and verify if internet access is available. Using Configuration and Diagnostic Tool: 1. Select Read Settings from Device. Verify GPRS Settings: Gateway, User ID, and Password. 2. Use modem SIM card in a smartphone and verify if internet access is available.
	No signal strength. (Settings verified.)	Contact the cell phone provider. Verify: 1. An active SIM card contract. 2. Provider supports GPRS and VPN. 3. SIM card ready for SMS. 4. SIM card functioning. 5. Roaming setting. If needed, change the setting. Test a different SIM card. Test a different modem.
Modem Status: Idle	No RTK data, no signal strength.	Check another location with known good coverage. Using GreenStar Display: 1. Check Serial Settings and NMEA message (baud rate 19200, GGA messages enabled). 2. Select Retrieve Modem Settings on Modem / Network Configuration page. Verify Gateway Settings: APN, User ID, and Password. Using Configuration and Diagnostic Tool: 1. Verify GPRS Settings: Gateway, User ID, and Password.

Symptom	Problem	Solution
		2. Verify Correction Data Settings: IP/URL, Port, Mountpoint, User ID, and Password. 3. Check Signal Level in the Connection box. 4. Perform a Dial-in Test and verify that Status is OK.
	Settings verified, no RTK data.	Check M-RTK Readings on StarFire Diagnostics page. For best performance and accuracy, do not exceed a radius of 20 km (12 mi) from a single base station. For John Deere Mobile RTK signal, contact your John Deere dealer or other service provider. For all other RTK signals, contact your RTK provider. Verify: 1. An active contract. 2. An available data plan. 3. Correct login data. 4. Provider not performing maintenance. 5. No known network issues. Test a different modem.
	Modem Status shows connected, but position mode is SF2 Fallback or RTK-X.	Using GreenStar Display: 1. On StarFire – Satellites page, verify a minimum of five satellites in solution. 2. On StarFire – Diagnostics – M-RTK Readings page, verify that Base Station Distance is shorter than 25 km (15.5 mi). For best performance and accuracy, do not exceed a radius of 20 km (12 mi) from a single base station.

bvvmsit, 1676454928874-19-09SEP25

Specifications

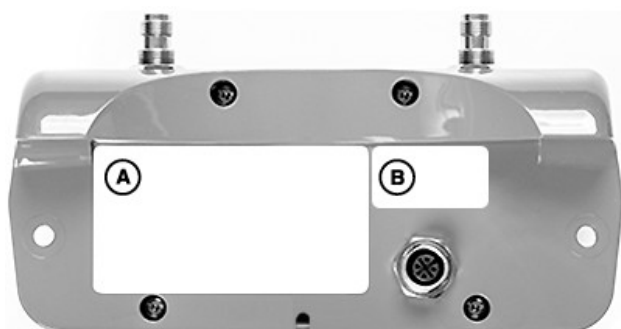
Identification Label

Letters and numbers on the label identify a component or assembly. All of these characters are needed when ordering parts or identifying the system or component for any John Deere product support program. Also, they are needed for law enforcement to trace your John Deere Mobile RTK system if it is ever stolen.

For these reasons, accurately record these characters.

OUCC002,0005569-19-12OCT17

John Deere Mobile RTK Modem



APY80298—UN—19DEC22

Mobile RTK Modem Serial Number

A—Label 1
B—Label 2

JOHN DEERE MRTK-LTE

PART NUMBER / НОМЕР ЧАСТИНИ: PFA13410



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Canada ICES-003(B)/NMB-003(B)

Contains FCC ID: QIPPLS63-W

Contains IC ID: 7830A-PLS63W

MADE IN GERMANY / Зроблено в Німеччині

Deere & Company, Moline, IL, USA / Молін, штат Іллінойс, США

PC631748—UN—17JAN25

Label 1

Serial Number / Серійний номер:

PCGTEGR631234



IMEI: 123456789123456

DATE CODE / КОД ДАТИ: 1234

PC631749—UN—17JAN25

Label 2

The label is on the backside of the Mobile RTK 4G LTE modem.

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John Deere Mobile RTK Modem Specifications

Operating Frequency:

- Twelve bands FDD-LTE: 700, 800, 850, 900, 1700/2100 (AWS), 1800, 1900, 2100, 2600 MHz, (bands 1, 2, 3, 4, 5, 7, 8, 12, 18, 19, 20, 28)
- UMTS (WCDMA/FDD): 800, 850, 900, 1700/2100 (AWS), 1800, 1900, and 2100 MHz (bands 1, 2, 4, 5, 8, 9, 19)
- GSM: 850, 900, 1800, and 1900 MHz

Maximal Transmitted Power:

- LTE: 23 dBm/0.2 W
- WCDMA: 24 dBm/0.25 W
- GSM: 33 dBm/2 W at 900 MHz
- GSM: 30 dBm/1 W at 1800 MHz

Antenna:

- External antennas, type PCTEL-PCTP/4GLTE for LTE, WCDMA, and GSM

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