

## RF Exposure Report

**Report No.:** SA191008C34

**FCC ID:** 2AAFX-JDCGNUS3110

**Test Model:** ROBOTIC MOWER CONNECTIVITY MODULE

**Received Date:** Oct. 08, 2019

**Date of Evaluation:** Nov. 29, 2019

**Issued Date:** Feb. 24, 2020

**Applicant:** Deere & Company

**Address:** One John Deere Place, Moline, IL 61265

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, TAIWAN

**FCC Registration /  
Designation Number:** 788550 / TW0003



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specifically mentioned, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

## Table of Contents

<b>Release Control Record</b> .....	<b>3</b>
<b>1 Certificate of Conformity</b> .....	<b>4</b>
<b>2 RF Exposure</b> .....	<b>5</b>
2.1 Limits for Maximum Permissible Exposure (MPE) .....	5
2.2 MPE Calculation Formula .....	5
2.3 Classification .....	5
2.4 Calculation Result of Maximum Conducted Power .....	6



### Release Control Record

Issue No.	Description	Date Issued
SA191008C34	Original Release	Feb. 24, 2020

## 1 Certificate of Conformity

**Product:** Robotic Mower Connectivity Module

**Brand:** John Deere

**Test Model:** ROBOTIC MOWER CONNECTIVITY MODULE

**Sample Status:** Production Unit

**Applicant:** Deere & Company

**Date of Evaluation:** Nov. 29, 2019

**Standards:** FCC Part 2 (Section 2.1091)

**References Test  
Guidance:** KDB 447498 D01 General RF Exposure Guidance v06  
IEEE C95.3 -2002

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** \_\_\_\_\_

*Lena Wang*

**Date:** \_\_\_\_\_

Feb. 24, 2020

Lena Wang / Specialist

**Approved by :** \_\_\_\_\_

*Dylan Chiou*

**Date:** \_\_\_\_\_

Feb. 24, 2020

Dylan Chiou / Project Engineer

## 2 RF Exposure

### 2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

f = Frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

pi = 3.1416

r = distance between observation point and center of the radiator in cm

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Output Power ERP / EIRP (dBm)	Output Power ERP / EIRP (mW)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
GSM850	824-849	27.30	537.032	20	0.107	0.55
PCS1900	1850-1910	32.60	1819.701	20	0.362	1.00
WCDMA II	1850-1910	30.00	1000.000	20	0.199	1.00
WCDMA IV	1710-1755	28.00	630.957	20	0.126	1.00
WCDMA V	824-849	21.5	141.254	20	0.028	0.55
LTE 2	1850-1910	25.60	363.078	20	0.072	1.00
LTE 4	1710-1755	26.20	416.869	20	0.083	1.00
LTE 12	699-716	21.10	128.825	20	0.026	0.47
WLAN	2412-2462	26.52	448.745	20	0.089	1.00
BT	2402-2480	9.64	9.204	20	0.002	1.00

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

### Conclusion:

The formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$WWAN + WLAN + BT = 0.362/1 + 0.089/1 + 0.002/1 = 0.453$$

Therefore the maximum calculations of above situations are less than the "1" limit.

--- END ---