

RF Exposure Report

Project Number: 3958632

Report Number: 3958632EMC15

Revision Level: 0

Client: Deere & Company

Equipment Under Test: Modular Telematics Gateway 4G LTE

Model Name: MA4G

FCC ID: OV5-MA4G

IC ID: 11137A-MA4G

Applicable Standards: Part 22(H), Part 24(E), Part 27

47 C.F.R. §§ 2.1091 and 2.1093; FCC KDB 447498

FCC OET Bulletin 65 Supplement

Report issued on: 10 May 2016

Test Result: Compliant

Tested by:



Fabian Nica, Senior Technician

Reviewed by:



Jeremy Pickens, Senior EMC Engineer

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or Testing done by SGS International Electrical Approvals in connection with distribution or use of the product described in this report must be approved by SGS international Electrical Approvals in writing.

TABLE OF CONTENTS

1	GENERAL INFORMATION	3
1.1	CLIENT INFORMATION	3
1.2	TEST LABORATORY	3
1.3	GENERAL INFORMATION OF EUT	3
1.4	OPERATING MODES AND CONDITIONS	3
2	RF EXPOSURE	4
2.1	TEST RESULT	4
2.2	TEST METHOD	4
2.3	SINGLE TRANSMISSION RF EXPOSURE LEVELS	4
2.4	SIMULTANEOUS TRANSMISSION RF EXPOSURE LEVELS	4
3	REVISION HISTORY	5

1 General Information

1.1 Client Information

Name: Deere & Company
Address: One John Deere Place
City, State, Zip, Country: Moline, IL 61265, USA

1.2 Test Laboratory

Name: SGS North America, Inc.
Address: 620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country: Suwanee, GA 30024, USA

Accrediting Body: A2LA
Type of lab: Testing Laboratory
Certificate Number: 3212.01

1.3 General Information of EUT

Type of Product: Modular Telematics Gateway 4G LTE
Model Number: MA4G
FCC ID: OV5-MA4G
IC ID: 11137A-MA4G

Rated Voltage: 9-32 Vdc
Test Voltage: 12 Vdc
FCC Classification: PCS Licensed Transmitter PCB
Type: Pre Production

Sample Received Date: 18 March 2016

1.4 Operating Modes and Conditions

For this assessment, the EUT's maximum power including the maximum tolerance was considered.

2 RF Exposure

2.1 Test Result

Test Description	Product Specific Standard	Test Result
RF Exposure	FCC Part 1.1310	Compliant

2.2 Test Method

Using the maximum power (including tune-up tolerances), the power density was calculated. Maximum antenna gain was assumed for this exercise.

2.3 Single transmission RF Exposure Levels

Band of Operation		Conducted Power w/tolerance dBm	Antenna Gain	Cable Loss	Average EIRP		Distance (R) cm	Power Density EIRP _{avg} /(4πR ²) mW/cm ²	FCC mW/cm ²	% of Limit	Verdict
Type	MHz				dBm	mW					
LTE Band 2	1850-1910	25.0	0.9	0.0	25.9	385	20	0.077	1.00	8%	Pass
LTE Band 4	1710-1755	25.0	1.3	0.0	26.3	428	20	0.085	1.00	9%	Pass
LTE Band 5	824-849	25.0	-0.1	0.0	24.9	310	20	0.062	0.55	11%	Pass
LTE Band 17	704-716	25.0	2.3	0.0	27.3	537	20	0.107	0.47	23%	Pass
WCDMA Band II	1850-1910	26.0	0.9	0.0	26.9	484	20	0.096	1.00	10%	Pass
WCDMA Band IV	1710-1755	26.0	1.3	0.0	27.3	538	20	0.107	1.00	11%	Pass
GSM 850	824-849	26.0	-0.1	0.0	25.9	390	20	0.078	0.55	14%	Pass
GSM 1900	1850-1910	23.0	0.9	0.0	23.9	243	20	0.048	1.00	5%	Pass
WLAN 2.4	2400-2483.5	23.0	-0.4	0.0	22.6	180	20	0.036	1.00	4%	Pass
WLAN 5 GHz (UNII-1)	5150-5250	17.0	-1.1	0.0	15.9	39	20	0.008	1.00	1%	Pass
WLAN 5.8 GHz (UNII-3)	5725-5850	17.0	-0.3	0.0	16.7	47	20	0.009	1.00	1%	Pass
Bluetooth	2400-2483.5	13.0	-0.4	0.0	12.6	18	20	0.004	1.00	0%	Pass

2.4 Simultaneous transmission RF Exposure Levels

Simultaneous Transmissions - Percent of Limit				
	WLAN 2.4	Bluetooth	WLAN 5 GHz (UNII-1)	WLAN 5.8 GHz (UNII-3)
LTE Band 17	26%	23%	23%	23%
GSM 850	17%	14%	14%	15%
LTE Band 5	14%	11%	12%	12%
WCDMA Band IV	22%	19%	20%	20%
LTE Band 4	12%	9%	9%	9%
GSM 1900	8%	5%	6%	6%
WCDMA Band II	13%	10%	10%	11%
LTE Band 2	11%	8%	8%	9%

3 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	10 May 2016