

RF Exposure Report

Project Number: 4775973

Offer Number: SUW-202102000564 v2

Report Number: 4775973EMC05

Revision Level: 0

Client: Mueller Systems, LLC

Equipment Under Test: Mueller Cellular Node

Model: MS-CELLNODE

FCC ID: SM6-CELLNODE

Contains FCC ID: N7NHL78M

Applicable Standards: 47 CFR §§ 2.1091

FCC KDB 447498 D01 General RF Exposure Guidance v06

Report issued on: 10 September 2021

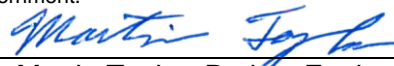
Result: Compliant



FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 3212.01

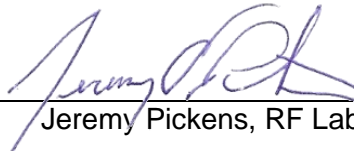
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Remarks: This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are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

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1 General Information

1.1 Client Information

Name: Mueller Systems, LLC
 Address: 1200 Abernathy Road, NE Suite 1200
 City, State, Zip, Country: Atlanta, Georgia 30328, 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

Equipment Under Test: Mueller Cellular Node

Model: MS-CELLNODE

Serial Number: MC00000052

FCC ID: SM6-CELLNODE

Contains FCC ID: N7NHL78M

Tx Frequency Range: 2402 – 2480 MHz (BLE)
 1850 – 1910 MHz (LTE Band 2) (subset of band 25)
 1710 – 1755 MHz (LTE Band 4) (subset of band 66)
 824 – 849 MHz (LTE Band 5) (subset of band 26)
 699 – 716 MHz (LTE Band 12)
 777 – 787 MHz (LTE Band 13)
 788 – 798 MHz (LTE Band 14)
 704 – 716 MHz (LTE Band 17) (subset of band 12)
 1850 – 1915 MHz (LTE Band 25)
 814 – 849 MHz (LTE Band 26)
 1710 – 1780 MHz (LTE Band 66)

Data Modes: Bluetooth Low Energy (GFSK)
 LTE Cat M1 (eMTC)

Antenna: BLE: Bent wire antenna (2dBi gain)

LTE: PCB antenna

Bands 5/12/13/14/17/26: 2.76dBi gain

Bands 2/4/25/66: 6.32dBi gain

Rated Voltage: 3.6 Vdc (D Cell Lithium Battery)

Test Voltage: 3.6 Vdc from Lab Power Supply

Sample Received Date: 01 June 2021

Dates of testing: 21-22 July 2021

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 conducted 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 (mW/cm²)

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	24.5	6.3	0.0	30.8	1208	20	0.240	1.00	24%	Pass
LTE Band 4	1710-1755	24.5	6.3	0.0	30.8	1208	20	0.240	1.00	24%	Pass
LTE Band 5	824-849	24.5	2.8	0.0	27.3	532	20	0.106	0.55	19%	Pass
LTE Band 12	699-716	24.5	2.8	0.0	27.3	532	20	0.106	0.47	23%	Pass
LTE Band 13	777-787	24.5	2.8	0.0	27.3	532	20	0.106	0.52	20%	Pass
LTE Band 14	788-798	24.5	2.8	0.0	27.3	532	20	0.106	0.53	20%	Pass
LTE Band 17	704-716	24.5	2.8	0.0	27.3	532	20	0.106	0.47	23%	Pass
LTE Band 25	1850-1915	24.5	6.3	0.0	30.8	1208	20	0.240	1.00	24%	Pass
LTE Band 26	814-849	24.5	2.8	0.0	27.3	532	20	0.106	0.54	20%	Pass
LTE Band 66	1710-1780	24.5	6.3	0.0	30.8	1208	20	0.240	1.00	24%	Pass
Bluetooth	2400-2483.5	3.3	2.0	0.0	5.3	3	20	0.001	1.00	0%	Pass

2.4 Simultaneous transmissions

The EUT does not operate with simultaneous transmissions.

3 Revision History

Revision Level	Description of changes	Revision Date
0	Initial Release	10 September 2021