

RF Exposure Report

Project Number: 4643713

Proposal Number: 05192020NG-1.1

Report Number: 4643713EMC05

Client: Mueller Systems, LLC.

Equipment Under Test: Wireless Sensor Board

Model: Smart Hydrant Sensor

FCC ID: 2AXKR-SH-SEN-V1

Applicable Standards: 47 C.F.R. §§ 2.1091

FCC KDB 447498 D01 General RF Exposure Guidance v06

FCC OET Bulletin 65

Report Date: 06 October 2020

Test Result: Compliant

Tested by:


Brandon Osborn, Project Engineer

Reviewed by:


Stephen Whalen, SAR/EMC Manager

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 Rd NE, Suite 1200
City, State, Zip, Country: Atlanta, GA 30328, USA

1.1 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

1.2 General Information of EUT

Type of Product: Sensor with BLE
FCC ID: 2AXKR-SH-SEN-V1
Model Number: Smart Hydrant Sensor
Serial Number: SHS00000035

Frequency Range: 2402 – 2480 MHz
Modulation: Bluetooth Low Energy – GFSK (1Mbps, 2Mbps)
Antenna: External Dipole in Potted material / 3.7dBi (max)

Sample Received Date: 30 June 2020
Dates of testing: 11-17 August 2020

1.3 Operating Modes and Conditions

Maximum power levels were utilized for all calculations. Simultaneous transmission was not possible.

Channel 0, 2402MHz
Channel 19, 2440MHz
Channel 39, 2480MHz

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 (mW/cm²)

Band of Operation		Conducted Power w/tolerance	Antenna Gain	Cable Loss	Average EIRP		Distance (R)	Power Density EIRP _{Avg} /(4πR ²)	FCC	% of Limit	Verdict
Type	MHz	dBm			dBm	mW	cm	mW/cm ²	mW/cm ²		
Bluetooth	2400-2483.5	4.060	3.700	0.100	7.660	5.834	20.000	0.001	1.000	0.001	Pass

3 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	06 October 2020