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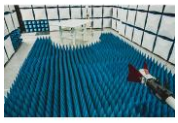

RF EXPOSURE EVALUATION
Maximal Permissible Exposure [MPE]

Applicant Name:
Saucon Technologies, Inc.
2455 Baglyos Circle
Bethlehem, PA 18020

Date of Testing:
12/11/2020-12/16/2020
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M2012080194.03.2AYQW

FCC ID:	**2AYQW-IOTTEMP**
APPLICANT:	**Saucon Technologies, Inc.**

EUT Type:	IoT Temperature Beacon
FCC Classification:	Part 15 Low Power Communication Device Transmitter (DXX)
FCC Rule Part:	FCC Part 1 (§1.1310) and Part 2 (§2.1091)
Test Procedure(s):	KDB 447498 D01

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in FCC KDB 447498 D01. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Randy Ortanez
President

ACCREDITED
CERT #2041.01

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1.0 RF EXPOSURE EVALUATION – MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 Introduction

This document is prepared to show compliance with the RF Exposure requirements as required in §1.1310 of the FCC Rules and Regulations and RSS-102 of Industry Canada.

The limit for Maximum Permissible Exposure (MPE), specified in FCC §1.1310, is listed in Table 1-1. According to FCC §1.1310 and RSS-102: the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b).

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits For Occupational / Control Exposures (f = frequency)				
30-300	61.4	0.163	1.0	6
300-1500	…	…	f/300	6
1500-100,000	…	…	5.0	6
(B) Limits For General Population / Uncontrolled Exposure (f = frequency)				
30-300	27.5	0.073	0.2	30
300-1500	…	…	f/1500	30
1500-100,000	…	…	1.0	30

Table 1-1. Limits for Maximum Permissible Exposure (MPE)

1.2 EUT Description

The **Saucon Technologies FCC ID: 2AYQW-IOTTEMP** is a IOT Temperature Beacon containing a low power communication device transmitter that the EUT uses to connect to another device. The EUT has a removable battery (non-rechargeable) to power itself.

1.3 Procedure

The procedure used to determine the RF power density was based upon a calculation for determining compliance with the MPE requirements.

The power generated by each transmitter used in this product was initially measured by a spectrum analyzer and the powers were recorded. Through use of the Friis transmission formula and knowledge of the maximum antenna gain to be used, the power density level is calculated at a distance of 20cm.

Friis Transmission Formula

Friis transmission formula: $P_d = (P_{out}*G) / (4\pi r^2)$

Where,

P_d = Power Density (mW/cm^2)
P_{out} = output power to antenna (mW)
G = gain of antenna in linear scale
π = 3.1416
r = distance between observation point and center of the radiator (cm)

Calculated MPE

The power density limit for General Population/Uncontrolled Exposure at each frequency is determined based on the information in Table 1-1.

There is no co-location between the electric fields of any two transmitters therefore following power densities are calculated for each individual transmitter by frequency at 20cm spacing:

Frequency	2402	MHz		
Limit	1.000	mW/cm^2		
Distance (cm), R =	20	cm		
Power (dBm), P =	-3	dBm	0.50	mW
TX Ant Gain (dB), G =	0	dBi		
Power Density (S) =	**0.0001**	mW/cm^2	(at 20cm)	
Minimum Distance =	**0.2**	cm		

Table 1-2. Calculated MPE Data for 2.4GHz Band

1.4 Summary of Results

Frequency Band [MHz]	Maximum Antenna Gain [dBi]	MPE @ 20cm (mW/cm^2)	Test Result
2400	0	0.0001	PASS

Table 1-3. Maximum Permissible Exposure Summary Table

2.0 CONCLUSION

The device meets the mobile RF exposure limit at a 20cm separation distance as specified in §2.1091 of the FCC Rules and Regulations and Health Canada Safety Code 6. An appropriate RF exposure compliance statement will be placed in the user's manual.