

RF Exposure Technical Brief

Project Number: P011575

Report Number: P011575EMC02

Client: SteamIQ, Inc.

Equipment Under Test: SteamIQ

Model: 2101

FCC ID: 2AVL60001101

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

FCC KDB 447498 D01 General RF Exposure Guidance v06

Brief Issued: 1 June 2021

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: SteamIQ, Inc.
Address: 632 Main Street
City, State, Zip, Country: Hingham, Massachusetts, 02043, 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

Product Marketing Name (PMN): SteamIQ
Model Number (HVIN): 2101
Firmware Version ID (FVIN): n/a

Frequency Range: 125 kHz channel: 902.3-914.9 MHz
500 kHz channel: 903-914.2 MHz
Modulation Technique: LoRa
Spread Factor (SF): 125 kHz channel: 7-10
500 kHz channel: 7-12
Number of channels: 125 kHz channel: 64
500 kHz channel: 8
Channel spacing: 125 kHz channel: 200 kHz
500 kHz channel: 1.6 MHz
Antenna type: Monopole antenna
Antenna gain: 1.04 dBi
Power Supply: 3.3 V_{DC}

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)

2.3.1 Low frequency

Type of Evaluation:	FCC
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Average Power at the antenna:	75 mW
Average Power at the antenna:	0.08 Watts
Antenna gain:	1.04 dBi
Distance of interest:	20 cm
Frequency of operation:	902 MHz

Estimated RF Power Density: 0.0190 mW/cm²

	Controlled Environment	Uncontrolled Environment
Limit of Maximum Permissible Exposure (MPE)	3.01 mW/cm ²	0.6 mW/cm ²
Distance to Compliance From Centre of Antenna	0.63 inches 1.59 cm	1.4 inches 3.55 cm
In Compliance at distance of interest?	Yes	Yes

2.3.2 High frequency

Type of Evaluation:	FCC
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Average Power at the antenna:	75 mW
Average Power at the antenna:	0.08 Watts
Antenna gain:	1.04 dBi
Distance of interest:	20 cm
Frequency of operation:	915 MHz

Estimated RF Power Density: 0.0190 mW/cm²

	Controlled Environment	Uncontrolled Environment
Limit of Maximum Permissible Exposure (MPE)	3.05 mW/cm ²	0.61 mW/cm ²
Distance to Compliance From Centre of Antenna	0.62 inches 1.58 cm	1.39 inches 3.53 cm
In Compliance at distance of interest?	Yes	Yes