

SSPN Safety System Products North AB

MPE ASSESSMENT REPORT

Report Type:
FCC MPE assessment report

Model:
RB001

REPORT NUMBER:
211102777SHA-002

ISSUE DATE:
April 12, 2022

DOCUMENT CONTROL NUMBER:
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TEST REPORT

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Report no.: 211102777SHA-002

Applicant: SSPN Safety System Products North AB
Tullkammarv 14 S-439 31 Onsala Sweden

Manufacturer: SSPN Safety System Products North AB
Tullkammarv 14 S-439 31 Onsala Sweden

FCC ID: 2AXNQ2101A

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06

FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:

Project Engineer
Erick Liu

REVIEWED BY:

Reviewer
Wakeyou Wang

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TEST REPORT**Revision History**

Report No.	Version	Description	Issued Date
211102777SHA-002	Rev. 01	Initial issue of report	April 12, 2022

TEST REPORT**1 GENERAL INFORMATION****1.1 Description of Equipment Under Test (EUT)**

Product name:	Transceiver
Type/Model:	RB001
Description of EUT:	EUT is a wireless module, it has only one model.
Rating:	4.5-5.5V DC
Category of EUT:	Class B
EUT type:	<input checked="" type="checkbox"/> Table top <input type="checkbox"/> Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	November 30, 2021
Date of test:	November 30, 2021 – February 24, 2022

1.2 Technical Specification

Frequency Range:	2405-2480MHz
Type of Modulation:	O-QPSK
Channel Number:	16
Channel Separation:	5MHz
Antenna Information:	Antenna 1: Internal chip antenna, 4.0dBi max Antenna 2: External omni antenna, 3.0dBi max

Note:

1. This information is supplied by the applicant. Any change on this value would result in different test data / conclusion.

TEST REPORT**1.3 Description of Test Facility**

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0051
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

TEST REPORT**2 MPE Assessment****Test result:** Pass**2.1 MPE Assessment Limit**

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	$4 000/f$	$5 000/f$	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	$0,73/f$	$0,92/f$	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	$f/200$
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

TEST REPORT**2.2 Assessment Results**

Power density (S) is calculated according to the formula:

$$S = P / (4\pi R^2)$$

Where S = power density in mW/cm²

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 211102777SHA-001:

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Mode	Frequency band	Max Power	Antenna Gain	R	S	Limits
	(MHz)	dBm	dBi	(cm)	(mW/cm ²)	(mW/cm ²)
O-QPSK	2400 -2483.5	18.88	4.0	20	0.0386	1

The worst MPE = 0.0386 mW/cm² < 1 mW/cm².

TEST REPORT**Appendix I**

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

***** END *****