



BNetzA-CAB-19/21-51

Report

Report no.: 21025170-19946-0

Date of issue: 2021-05-12

Result: The test item - **passed** - and complies with the listed standards.

Applicant

Sewio Networks s.r.o.

Manufacturer

Sewio Networks s.r.o.

Test Item

Anchor Vista DirectFive

MPE/RF exposure calculation according to:

FCC Regulations

Part 1.1310

Part 2.1091

Tested by
(name, function, signature)

B.Sc. Piotr Sardyko
Lab Manager Radio


signature

Approved by
(name, function, signature)

Dr.-Ing. Harald Ansorge
Managing Director


signature

Applicant and Test item details

Applicant	Sewio Networks s.r.o. JIC INMEC, Purkynova 649/127 612 00, Brno Czech Republic
Manufacturer	Sewio Networks s.r.o. JIC INMEC, Purkynova 649/127 612 00, Brno Czech Republic
Test item description	Anchor
Model/Type reference	Anchor Vista DirectFive
FCC ID	2ATZ8-SWA08-00

Disclaimer and Notes

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Within this test report, a ☒ point / ☐ comma is used as a decimal separator.
If otherwise, a detailed note is added adjoined to its use.

Decision rule: Binary Statement for Simple Acceptance Rule according ILAC-G8:09/2019

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2 GENERAL INFORMATION

2.1 Administrative details

Testing laboratory	IBL-Lab GmbH Heinrich-Hertz-Allee 7 66386 Sankt Ingbert / Germany Fon: +49 6894 38938-0 Fax: +49 6894 38938-99 URL: www.ib-lenhardt.de E-Mail: info@ib-lenhardt.de
Accreditation	The testing laboratory is accredited by Deutsche Akkreditierungsstelle GmbH (DAkKS) in compliance with DIN EN ISO/IEC 17025:2018. Scope of testing and registration number: - Electromagnetic Compatibility and Telecommunication (FCC requirements) D-PL-21375-01-03 - Telekommunikation (TK) D-PL-21375-01-05 Website DAkKS: https://www.dakks.de/ The Deutsche Akkreditierungsstelle GmbH (DAkKS) is also a signatory to the ILAC Mutual Recognition Arrangement
Date of receipt of test samples	2021-03-15

2.2 Possible verdicts of the results

Test sample meets the requirements	P (PASS) – the measured value is below the acceptance limit, AL = TL
Test sample does not meet the requirements	F (FAIL) – the measured value is above the acceptance limit, AL = TL
Test case does not apply to the test sample	N/A (Not applicable)
Test case not performed	N/P (Not performed)

2.3 Observations

No additional observations other than the reported observations within this test report have been made.

2.4 Opinions and Interpretations

No appropriate opinions or interpretations according ISO/IEC 17025:2017 clause 7.8.7 are within this test report.

2.5 Revision History

0 Initial Version

2.6 Further documents

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3 TEST STANDARDS AND REFERENCES

Test standard (accredited)	
FCC Regulations Part 1.1310 Part 2.1091	---

Test standard (not accredited)	Description
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Reference	Description
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4 EQUIPMENT UNDER TEST (EUT)

4.1 Product Description*

Anchor is a reference device with a known position. Set of Anchors creates location infrastructure where Tags are being located with sub-meter accuracy. The primary goal of the device is to gather radio signals from mobile locators called Tags and forward them to RTLS Studio where the position is being estimated. Anchor is an IP network device equipped with an Ethernet interface for both data backhaul and/or power supply. Anchors are configured and managed via RTLS Studio software. They support variety of holders to simplify the installation in any premises. Anchors are mounted above Tags which ensures maximum coverage and minimizes obstacles blocking its communication line.

*: declared by the applicant

4.2 Technical Data of Equipment*

Main function	Anchor, reference node for real time location system
Device type	UWB system
Center frequency	6489.6 MHz
Type of modulation	BPM/PSK
Number of channels	1 UWB channel
Channel bandwidth	> 500 MHz
Emission designator(s)	IEEE 802.15.4-2011 UWB
Antenna Type	Integrated
MAX Field strength (radiated):	53.93 dBμV/m@3m distance and 1 MHz RBW
Power supply	PoE
EUT sample type	Production
FCC label attached	No
Max Antenna Gain	9.8 dBi

*: declared by the applicant

4.3 Test Item (Equipment Under Test) Description*

Short designation	EUT Name	EUT Description	Serial number	Hardware status	Software status
EUT A	Anchor Vista DirectFive	Anchor, reference node for real time location system	04:91:62:c9:6c:8e	1.6	3.1

*: declared by the applicant.

4.4 Additional Information

Test items differences	None
Additional application considerations to test a component or sub-assembly	None

5 RESULTS

5.1 Maximum Permissible Exposure

Reference

Please see Chapter 3

Limits

According to FCC CFR 47 Part 1.1310:

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

Calculation of Maximum Permissible Exposure:

Power Density = $P_d(\text{mW/cm}^2) = \text{EIRP}/(4 \cdot \pi \cdot d^2)$

d = Separation distance (cm)

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm².

Calculation*:

Freq. Band (MHz)	Max EIRP (dBm)**	Max EIRP (mW)	Calculated Power Density (mW/cm ²) @ 20 cm	Power Density Limit (mW/cm ²)
3100-10600	-41.3	7.41E-05	1.47E-08	1

* For mobile or fixed location transmitters the minimum separation distance is 20 cm, even if calculations indicate the MPE distance to be less.

**Please see Test Report 21025170-19326-1 dated 2021-05-03 (Chapter 7.3) for Max Output Power limits and measurements.

VERDICT: PASS.

END OF TEST REPORT