


RF Exposure Evaluation Report

Applicant: Nebra Ltd
Address of Applicant: Unit 4 Bells Yew Green Business Court, Bells Yew Green, Tunbridge Wells, East Sussex, TN3 9BJ
Equipment Under Test (EUT)
Product Name: Nebra HNT 5G Gateway
Model No.: NEBHNT-5G-915-1, NEBHNT-5G-915-2
FCC ID: 2AZDM-HNT5G
Applicable standards: FCC CFR Title 47 Part 2 (§2.1091)
Date of sample receipt: 07 Feb., 2023
Date of Test: 08 Feb., to 23 Feb., 2023
Date of report issue: 24 Feb., 2023
Test Result: PASS

Tested by: Mike Ou **Date:** 24 Feb., 2023
Reviewed by: Wenwen Zhang **Date:** 24 Feb., 2023
Approved by: [Signature] **Date:** 24 Feb., 2023
Test Engineer
Project Engineer
Manager



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 above the application standard version. Test results reported herein relate only to the item(s) tested.

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1 Version

Version No.	Date	Description
00	24 Feb., 2023	Original

2 Contents

	Page
Cover Page	1
1 Version	2
2 Contents.....	3
3 General Information	4
3.1 Client Information	4
3.2 General Description of E.U.T.	4
3.3 Operating Modes.....	4
3.4 Additions to, deviations, or exclusions from the method.....	4
3.5 Laboratory Facility	5
3.6 Laboratory Location.....	5
4 Technical Requirements Specification	6
4.1 Limits	6
4.2 Test Procedure	6
4.3 Result	7
4.4 Conclusion.....	7

3 General Information

3.1 Client Information

Applicant:	Nebra Ltd
Address:	Unit 4 Bells Yew Green Business Court, Bells Yew Green, Tunbridge Wells, East Sussex, TN3 9BJ
Manufacturer:	SUNSOAR TECH CO., LIMITED
Address:	4/F, Block E, Fengze Building, Huafeng No.2 Industrial Park, Hangkong Road, XiXiang Town, BaoAn District, Shenzhen, China
Factory :	EvrTech
Address:	No.44, Ying Tai Industry Area, Dalang South RD, Shenzhen, China

3.2 General Description of E.U.T.

Product Name:	Nebra HNT 5G Gateway
Model No.:	NEBHNT-5G-915-1, NEBHNT-5G-915-2
Operation Frequency:	923.3 MHz – 927.5 MHz 903.9 MHz – 905.3 MHz
Modulation technology:	Lora
Antenna Type:	External Antenna
Antenna gain:	3 dBi
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

3.3 Operating Modes

Operating mode	Detail description
Lora mode	Keep the EUT in continuously transmitting in Lora mode

3.4 Additions to, deviations, or exclusions from the method

No

3.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

3.6 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

4 Technical Requirements Specification

4.1 Limits

The criteria listed in the following table shall be used to evaluate the environment 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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
300–1500			f/300	6
1500–100,000			5	6
(B) 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
300–1500			f/1500	30
1500–100,000			1.0	30

4.2 Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

4.3 Result

Frequency (MHz)	Maximum Output power (dBm)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm ²)	Limits for General Population/ Uncontrolled Exposure (mW/cm ²)	Verdict
Lora								
925.1	22.429	174.944	3	2.00	20.00	0.069	0.62	Pass
Lora								
903.9	22.119	162.892	3	2.00	20.00	0.065	0.60	Pass

Note: Just the worst case mode was shown in report.

4.4 Conclusion

The device is exempt from the SAR test and satisfies RF exposure evaluation.

-----End of report-----