

EMF TEST REPORT

Test Report No. : OT-24N-RWD-009
Reception No. : 2410003623
Applicant : UNION COMMUNITY
Address : 12F, Munjeong Daemyeong Valeon bldg, 127 Beobwon-ro Songpa-gu, Seoul, South Korea
Manufacturer : UNION COMMUNITY
Address : 12F, Munjeong Daemyeong Valeon bldg, 127 Beobwon-ro Songpa-gu, Seoul, South Korea
Type of Equipment : Access controller
FCC ID : XX2-UBIO-NFACEPRO
Model Name : UBio-N Face Pro
Multiple Model Name : UBio-X Face Pro
Serial number : N/A
Total page of Report : 6 pages (including this page)
Date of Incoming : October 17, 2024
Date of Issuing : November 01, 2024

SUMMARY

The equipment complies with the requirements of **FCC CFR 47 § 1.1307**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

This report is not correlated with the "KS Q ISO/IEC 17025 and KOLAS accreditation" of Korean Laboratory Accreditation Scheme.

한동연



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CONTENTS

	Page
1. VERIFICATION OF COMPLIANCE	4
2. GENERAL INFORMATION.....	5
2.1 PRODUCT DESCRIPTION.....	5
2.2 MODEL DIFFERENCES.....	5
3. EUT MODIFICATIONS.....	5
4. RADIO FREQUENCY EXPOSURE	6
4.1 ENVIRONMENTAL EVALUATION AND EXPOSURE LIMIT	6

Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-24N-RWD-009	November 01, 2024	Initial Release	All

1. VERIFICATION OF COMPLIANCE

- . APPLICANT : UNION COMMUNITY
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- . CONTACT PERSON : Dong Ho, Lee
- . TELEPHONE NO : +82-2-6488-3054
- . FCC ID : XX2-UBIO-NFACEPRO
- . MODEL NO/NAME : UBio-N Face Pro
- . SERIAL NUMBER : N/A
- . DATE : November 01, 2024

E.U.T. DESCRIPTION	Access controller
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	KDB 447498 D04 Interim General RF Exposure Guidance v01 KDB 789033 D02 GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPART E
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT	
AUTHORIZATION REQUESTED	Certification
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	None

- . The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. GENERAL INFORMATION

2.1 Product Description

The UNION COMMUNITY, Model UBio-N Face Pro (referred to as the EUT in this report) is an Access controller, Product specification information described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	Access controller
TRANSMITTING FREQUENCY	126.3 kHz, 13.56 MHz 2 412 MHz ~ 2 462 MHz, 2 402 MHz ~ 2 480 MHz
MODULATION	ASK
ANTENNA TYPE	Coil Antenna, PCB Antenna
LIST OF EACH OSC. or CRY. FREQ.(FREQ. >= 1 MHz)	32.768 kHz, 24 MHz, 25 MHz, 27 MHz

2.2 Model Differences

- The following lists consist of the added model and their differences.

Model Name	Differences	Tested
UBio-N Face Pro	Basic Model	<input checked="" type="checkbox"/>
UBio-X Face Pro	The model is identical to basic model except for the model name only.	<input type="checkbox"/>

Note: 1. Applicant consigns only basic model to test. Therefore this test report just guarantees the units, which have been tested.

2. The Applicant/manufacturer is responsible for the compliance of all variants.

3. EUT MODIFICATIONS

- None

4. RADIO FREQUENCY EXPOSURE

4.1 Environmental evaluation and exposure limit

In accordance with KDB 447498 D04 Interim General RF Exposure Guidance v01.

1 mW Test Exemption according paragraph 2.1.2

- 124.755 kHz Maximum measured power = $77.66 \text{ dB}\mu\text{V/m} = 1.75 \times 10^{-2} \text{ mW}$ at 126.3 kHz
with $P = (E \times d)^2 / (30 \times G_p)$ with $d = 3 \text{ m}$ and $G_p = 1$
- 13.56 MHz Maximum measured power = $67.43 \text{ dB}\mu\text{V/m} = 1.66 \times 10^{-3} \text{ mW}$ at 13.56 MHz
with $P = (E \times d)^2 / (30 \times G_p)$ with $d = 3 \text{ m}$ and $G_p = 1$

Calculated MPE Safe Distance(WLAN 2.4G & LE 1M)

Operating Freq. Band (MHz)	Operating Mode	Target Power W/tolerance (dBm)	Max tune up power		Antenna Gain		Safe Distance (cm)	Power Density (mW/cm ²) @ 20 cm Separation	Limit (mW/cm ²)
			(dBm)	(mW)	Log	Linear			
WLAN_ 2.400 ~ 2.483.5	802.11b	17.28 ± 1.0	18.29	67.30	1.57	1.44	2.77	0.019 2	1.00
	802.11g	14.88 ± 1.0	15.88	38.73			2.10	0.011 1	1.00
	802.11n_HT20	14.90 ± 1.0	15.90	38.90			2.11	0.011 1	1.00
	802.11n_HT40	15.13 ± 1.0	16.13	41.02			2.16	0.011 7	1.00
	Bluetooth LE 1M	5.71 ± 1.0	6.71	4.69			0.73	0.001 3	1.00

DATA for Intermodulation Transmit

According to above equation, the following result was obtained.

Simultaneous Transmission	Operating Mode	Power Density (mW/cm ²)	Sum Power Density	Limit
WLAN 2.4G + 13.56 MHz (RFID) + 126.3 kHz	802.11b	0.019 2	0.019 4	1
	13.56 MHz (RFID)	0.000 1		
	126.3 kHz	0.000 1		