

# **RF Exposure Report**

Report No.: AGC12971230701FH01

**FCC ID** : 2AJYRNM01232285

**APPLICATION PURPOSE**: Original Equipment

**PRODUCT DESIGNATION**: Base One Max (3-in-1) with MagSafe

**BRAND NAME** : NOMAD

MODEL NAME : NM01232285

**APPLICANT**: Nomad Goods, Inc

**DATE OF ISSUE** : Aug. 24, 2023

STANDARD(S) : KDB680106 D01 RF Exposure Wireless Charging Base App

v03r01

**REPORT VERSION**: V 1.0

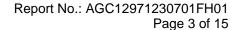
Attestation of Global Compliance (Shenzhen) Co., Ltd



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# REPORT REVISE RECORD

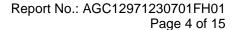
Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Aug. 24, 2023	Valid	Initial Release





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# 1. GENERAL INFORMATION

Applicant	Nomad Goods, Inc		
Address	1187 Coast Village Rd. #638, Santa Barbara, CA 93108, United States		
Manufacturer	NuVolta Technologies (Hefei) Co., Ltd.		
Address	Room 605/606, No.2800, Building F-1, Innovation Industrial Park Phase 2, Innovation Avenue, High-tech Zone, Hefei, Anhui, PRC.		
Factory	HUIZHOU MIKI TECHNOLOGY CO., LTD.		
Address	2F, 1# Building MIKI Industrial Park, Guangtaibei Road 39, Huinan Hi-Tech Industrial Park, Huizhou, Guangdong.		
Product Designation	Base One Max (3-in-1) with MagSafe		
Brand Name	NOMAD		
Test Model	NM01232285		
Series Model	NM01235385		
Difference Description	All the same except appearance color.		
Deviation from Standard	No any deviation from the test method		
Date of Receipt	Jul. 05, 2023		
Date of Test	Jul. 11, 2023~Aug. 24, 2023		
Test Result	Pass		

Reviewed By

Cici Li
(Project Engineer)

Calvin Liu
(Reviewer)

Aug. 24, 2023



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# 2. PRODUCT INFORMATION

# 2.1 PRODUCT TECHNICAL DESCRIPTION

Equipment Specification	WPT
Frequency Band	WPT_1: 110.5kHz-205kHz WPT_2: 325kHz-330kHz WPT_3: 360kHz-365kHz
Operation Frequency	146.6kHz, 326.5kHz, 360.0kHz
Hardware Version	T-NO3_V1.2
Software Version	NU1708A2_Tx_JDM_T_NO3_A11a_BPP_5W_V0.10
Modulation Type	ASK
Field Strength of Fundamental	66.77dBuV/m (Max)
Antenna Designation	Coil Antenna
Antenna Gain	0dBi
EUT Input& Output Rating	Input: DC 12V 3A for adapter Output 1: DC 12V 1.25A Max 15W Output 2: DC 5V 0.5A Max 2.5W Output 3:DC 5V 1A Max 5W
Wireless Charging Output Power	22.5W(total)
Adapter Information	N/A



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#### 2.2 TEST FREQUENCY LIST

# For AirPods Pro Case:

Frequency Band	Channel Number	Frequency
110.5~205kHz	01	146.6kHz

# For New Apple Wacth:

Frequency Band	Channel Number	Frequency
325~330kHz	01	326.5kHz

# **For Apple Mobile Phone:**

Frequency Band	Channel Number	Frequency
360~365kHz	01	360.0kHz



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#### 3. TEST ENVIRONMENT

#### 3.1 ADDRESS OF THE TEST LABORATORY

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

#### 3.2 TEST FACILITY

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

## CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

# A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

# FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

#### IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.



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# 3.3 ENVIRONMENTAL CONDITIONS

NORMAL CONDITIONS	EXTREME CONDITIONS
15 - 35	<del></del>
20 % - 75 %	
86 - 106	
	15 - 35 20 % - 75 %

Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.

#### 3.4 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
E-Field Strength(0.003-0.4MHz)	±1.5dB
E-Field Strength(0.4-10MHz)	±1.3dB
H-Field Strength(0.003-0.4MHz)	±1.3dB
H-Field Strength(0.4-10MHz)	±1.2dB

# 3.5 LIST OF EQUIPMENTS USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Broadband Field Meter	WAVECONTROL	SMP2	J-0004	Feb. 24, 2023	Feb. 23, 2024
Probe FHP	WAVECONTROL	WP400	J-0015	Feb. 24, 2023	Feb. 23, 2024



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# 4. EQUIPMENT USED IN TESTED SYSTEM

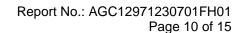
The Following Peripheral Devices And Interface Cables Were Connected During The Measurement:

☐ Test Accessories Come From The Laboratory

Item	Equipment	Model No.	Identifier	Note
1	Huawei Adapter	P60 Pro	Input: AC 100-240V, 24A Output: DC 5V, 2A/ DC 10V, 4A/ DC 11V, 6A/ DC 20V, 44A	Accessories
2	USB Cable	N/A	1m, Unshielded	Accessories

☐ Test Accessories Come From The Manufacturer

Item	Equipment	Model No.	Identifier	Note
1	Base One Max (3-in-1) with MagSafe	NM01232285	2AJYRNM01232285	EUT
2	Apple Mobile Phone	iPhone 12	N/A	Accessories
3	New Apple Watch	Series 8	N/A	Accessories
4	Earphone	AirPods 3	N/A	Accessories





#### 5. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION	<b>Exposure Conditions</b>
1	AC/DC Adapter + EUT + Mobile Phone (Battery Status: <1%)	Mobile
2	AC/DC Adapter + EUT + Mobile Phone (Battery Status: <50%)	Mobile
3	AC/DC Adapter + EUT + Mobile Phone (Battery Status: 100%)	Mobile
4	AC/DC Adapter + EUT + Earphone (Battery Status: <1%)	Mobile
5	AC/DC Adapter + EUT + Earphone (Battery Status: <50%)	Mobile
6	AC/DC Adapter + EUT + Earphonet (Battery Status: 100%)	Mobile
7	AC/DC Adapter + EUT + Apple Watch (Battery Status: <1%)	Mobile
8	AC/DC Adapter + EUT + Apple Watch (Battery Status: <50%)	Mobile
9	AC/DC Adapter + EUT + Apple Watch (Battery Status: 100%)	Mobile
10	AC/DC Adapter + EUT +Mobile Phone+ Earphone+ Apple Watch (Battery Status: <1%)	Mobile
11	AC/DC Adapter + EUT +Mobile Phone+ Earphone+Apple Watch (Battery Status: <50%)	Mobile
12	AC/DC Adapter + EUT +Mobile Phone+ Earphone+Apple Watch (Battery Status: 100%)	Mobile
13	AC/DC Adapter + EUT +Mobile Phone+ Earphone (Battery Status: <1%)	Mobile
14	AC/DC Adapter + EUT +Mobile Phone+ Earphone (Battery Status: <50%)	Mobile
15	AC/DC Adapter + EUT +Mobile Phone+ Earphone (Battery Status: <100%)	Mobile
16	AC/DC Adapter + EUT +Mobile Phone+ Apple Watch (Battery Status: <1%)	Mobile
17	AC/DC Adapter + EUT +Mobile Phone+ Apple Watch (Battery Status: <50%)	Mobile
18	AC/DC Adapter + EUT +Mobile Phone+ Apple Watch (Battery Status: <100%)	Mobile
19	AC/DC Adapter + EUT + Earphone+ Apple Watch (Battery Status: <1%)	Mobile
20	AC/DC Adapter + EUT + Earphone+ Apple Watch (Battery Status: <50%)	Mobile
21	AC/DC Adapter + EUT + Earphone+ Apple Watch (Battery Status: <100%)	Mobile

#### Note:

- All test modes were pre-tested, but we only recorded the worst case in this report.
- 2. The manufacturer provides wireless charging equipment for testing and evaluation (**Apple Phone**, **New Apple Watch, Earphone**).
- 3. According to the manufacturer's design principle, the wireless charging power will reach its maximum whe n the client device's battery level is between 1% and 10%.

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# 6. RF EXPOSURE MEASUREMENT

#### **6.1 REFER EVALUATION METHOD**

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

FCC KDB publication 680106 D01v03r01 RF Exposure Wireless Charging Apps v03: RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications

FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.

FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices.

FCC CFR 47 part 18.107: Indusial, Scientific, and Medical Equipment.

#### **6.2 TEST LIMITS**

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency	Electric Field	Magnetic Field	Power Density	Averaging Time				
Range(MHz)	Strength(V/m)	Strength(A/m)	(mW/cm²)	(minute)				
	Limits for Occupational/Controlled Exposure							
0.3-3.0	614	1.63	*100	6				
3.0-30	1842/f	4.89/f	*900/f²	6				
30-300	61.4	0.163	1.0	6				
300-1,500	/	/	f/300	6				
1,500-100,000	/	/	5	6				

## Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency	Electric Field	Magnetic Field	Power Density	Averaging Time			
Range(MHz)	Strength(V/m)	Strength(A/m)	(mW/cm²)	(minute)			
Limits for General Population/Uncontrolled Exposure							
0.3-1.34	614	1.63	*100	30			
1.34-30	824/f	2.19/f	*180/f²	30			
30-300	27.5	0.073	0.2	30			
300-1,500	/	/	f/1500	30			
1,500-100,000	/	/	1.0	30			

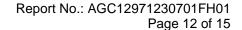
F=frequency in MHz

According to FCC KDB 680106 D01v03r01 Section 3. RF Exposure Requirements clause 3 the Emission-Limits in the frequency range from 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of CFR 47 – Section1.310 as following (measured distance shall be 15cm from the center of the probe to the edge of the device):

E-Field		*/*	B-Field
Frequency	V/m	A/m	uT
0.3 MHz – 3.0 MHz	614	1.613	2.0
3.0 MHz – 30 MHz	824/f (=27.5 <sub>30MHz</sub> )	2.19/f (=0.073 <sub>30MHz</sub> )	

#### A KDB inquire was required to determine/confirm the applicable limits below 100 kHz.

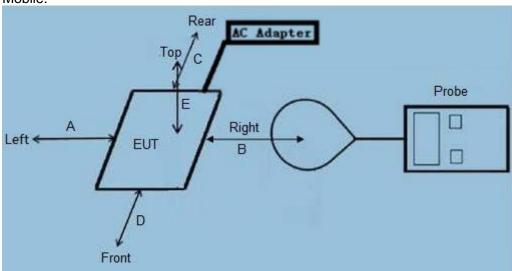
<sup>\*=</sup>Plane-wave equivalent power density



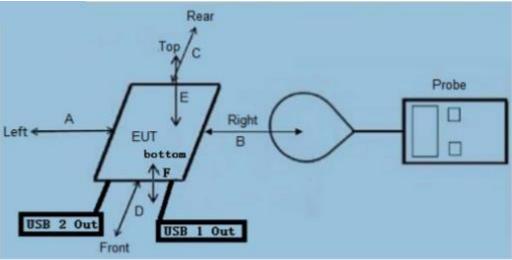


#### **6.3 MEASUREMENT SETUP**

#### Mobile:



#### Portable:



#### Note:

- -- RF exposure assessment tests are conducted in a shielded room.
- -- Refer to the following test method description for the test distance between the edge of the charger and the measuring probe.
- -- As shown in the above picture, the test layout is not for the real object, only the requirements of the test layout listed in the standard requirements are presented, for reference only.
- -- The actual test EUT distinguishes the test type according to the requirements as shown in the figure above.



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#### **6.4 MEASUREMENT PROCEDURE**

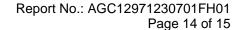
#### For mobile RF exposure:

- a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
- b) The measurement probe was placed at test distance (15cm) which is between the edge
- c) The charger and the geometric center of probe. And a test distance (20cm) which is between the Top of the charger and the geometric center of probe.
- d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- e) The EUT were measured according to the dictates of KDB 680106 D01v03r01.

# For portable RF exposure:

- a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
- b) The measurement probe was placed at test distance (from 0 cm to 20 cm, in 2 cm maximum increment) which is between the edge of the charger and the geometric center of probe.
- c) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F,) were completed.
- d) The EUT were measured according to the dictates of KDB 680106 D01v03r01

Remark: The diameter size of the probe is 11.5cm.





#### **6.4 MEASUREMENT RESULTS**

Mobile devices are evaluated as follows:

Operate	Test Frequency (kHz)	Field Strength	Measured H-Field Strength Values (A/m) Measured E-Field Strength Values (V/m)					FCC	50% FCC
Mode			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit	limit
Mode 10	146.6	nT	75.38	62.81	100.50	138.19	238.69		
Mode 10	146.6	A/m	0.06	0.05	0.08	0.11	0.19	1.63	0.815
Mode 10	146.6	V/m	0.649	0.657	0.774	0.716	0.781	614	307
Mode 10	360.0	nT	62.81	87.94	75.38	125.63	226.13		
Mode 10	360.0	A/m	0.05	0.07	0.06	0.1	0.18	1.63	0.815
Mode 10	360.0	V/m	0.659	0.637	0.728	0.742	0.734	614	307
Mode 10	326.5	nT	87.94	100.50	100.50	113.07	201.01		
Mode 10	326.5	A/m	0.07	0.08	0.08	0.09	0.16	1.63	0.815
Mode 10	326.5	V/m	0.619	0.637	0.744	0.723	0.778	614	307

Note: Unit conversion formula: 1ut=1.25A/m

Multiple Frequency Summation:

Operate Mode	Measured Distance (cm)	Field	Measured H-Field Strength Values Measured E-Field Strength Values					
		Strength	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit
Mode 10	15	(A/m) /1.63	0.1104	0.1227	0.1350	0.1840	0.3252	1
		(A/m) /0.815	0.2209	0.2454	0.2699	0.3681	0.6503	1
Mode 10	15	(V/m) /614	0.0031	0.0037	0.0036	0.0037	0.0021	1
		(V/m) /317	0.0063	0.0073	0.0071	0.0075	0.0041	1

#### Note:

- 1. ∑(Em/ERL)≤1
- 2. Em = Measured electric field at a specific frequency
- 3. ERL = Reference level limit for the electric field at the measurement frequency
- 4. ∑(Hm/HRL)≤1
- 5. Hm = Measured magnetic field at a specific frequency
- 6. HRL = Reference level limit for the magnetic field at the measurement frequency



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# **APPENDIX I: PHOTOGRAPHS OF TEST SETUP**

Refer to the Report No.: AGC12971230701AP01

----END OF REPORT-----



# Conditions of Issuance of Test Reports

- 1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").
- 2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
- 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
- 4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.