RF Exposure Report

Report No.: AGC12971220701FH01

FCC ID	:	2AJYRNM01309185
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Base One Max(3-in-1) Magsafe Charger
BRAND NAME	:	NOMAD
MODEL NAME	:	NM01309185, NM01310785
APPLICANT	:	Nomad Goods, Inc
DATE OF ISSUE	:	Aug. 25, 2022
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. 25, 2022	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 (Heifei) 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) Magsafe Charger
Brand Name	NOMAD
Test Model	NM01309185
Series Model	NM01310785
Difference description	All the same except appearance color
Deviation from Standard	No any deviation from the test method
Date of Test	Jul. 28, 2022~Aug. 24, 2022
Test Result	Pass

Prepared By	Bibo Zhang (Project Engineer)	Aug. 24, 2022
Reviewed By	Calvin Liu (Reviewer)	Aug. 25, 2022
Approved By	Max Zhang (Authorized Officer)	Aug. 25, 2022

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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	360.0KHz, 326.5KHz, 143.8KHz
Hardware Version	T-NO3_V1.0
Software Version	NU1708A2_Tx_JDM_T_NO3_A11a_BPP_5W_0722
Modulation Type	ASK
Number of channels	3
Field Strength of Fundamental	68.43dBuV/m (Max)
Antenna Designation	Coil Antenna
Antenna Gain	0dBi
Power Supply	Input: DC 12V 3A for adapter, Max 30W Output 1: DC 12V 1.25A Max 15W Output 2: DC 5V 0.3A Max 1.5W Output DC 5V 1A Max 5W
Adapter Information	N/A

2.2 TEST FREQUENCY LIST

For AirPods Pro Case:

Frequency Band	Channel Number	Frequency
110.5~205KHz	01	143.8KHz

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
Temperature range (℃)	15 - 35	--
Relative humidity range	20 % - 75 %	--
Pressure range (kPa)	86 - 106	--
Power supply	120V 60Hz	--
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	Jun. 08, 2022	Jun. 07, 2023
Probe FHP	WAVECONTROL	WP400	J-0015	Jun. 08, 2022	Jun. 07, 2023

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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	HW-200325CP0	Input:AC 100-240V, Max0.6A Output:DC 12V, Max3.0A	Accessories

☒ Test Accessories Come From The Manufacturer

Item	Equipment	Model No.	Identifier	Note
1	Base One Max(3-in-1) Magsafe Charger	NM01309185	2AJYRNM01309185	EUT
2	USB Cable	N/A	1.5m, Shielded	Accessories
3	Wireless Load	N/A	N/A	Accessories
4	Apple Mobile Phone	iPhone 12	N/A	Accessories
5	New Apple Watch	Series 7	N/A	Accessories

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5. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION	Exposure Conditions
1	AC/DC Adapter + EUT + Mobile Phone+ Watch (Battery Status: <1%) +Wireless load (Full Load)	Mobile
2	AC/DC Adapter + EUT + Mobile Phone+ Watch (Battery Status: <50%) +Wireless load (Full Load)	Mobile
3	AC/DC Adapter + EUT + Mobile Phone+ Watch (Battery Status: <99%) +Wireless load (Full Load)	Mobile
4	AC/DC Adapter + EUT + Mobile Phone+Watch(Battery Status: <1%) +Wireless load (Half Load)	Mobile
5	AC/DC Adapter + EUT + Mobile Phone+ Watch (Battery Status: <50%) +Wireless load (Half Load)	Mobile
6	AC/DC Adapter + EUT + Mobile Phone+ Watch (Battery Status: <99%) +Wireless load (Half Load)	Mobile
7	AC/DC Adapter + EUT + Mobile Phone+ Watch (Battery Status: <1%) +Wireless load (Null Load)	Mobile
8	AC/DC Adapter + EUT + Mobile Phone+ Watch (Battery Status: <50%) +Wireless load (Null Load)	Mobile
9	AC/DC Adapter + EUT + Mobile Phone+ Watch (Battery Status: <99%) +Wireless load (Null Load)	Mobile
10	AC/DC Adapter + EUT (Null Load)	Mobile

Note:
1. Only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

The manufacturer provides wireless charging equipment for testing and evaluation (**Apple Phone**, **New Apple Wacth**), and the wireless load replaces the **AirPods Pro Case**.

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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 Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm²)	Averaging Time (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 Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm²)	Averaging Time (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
*=Plane-wave equivalent power density

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_{30MHz})	2.19/f (=0.073_{30MHz})	--

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

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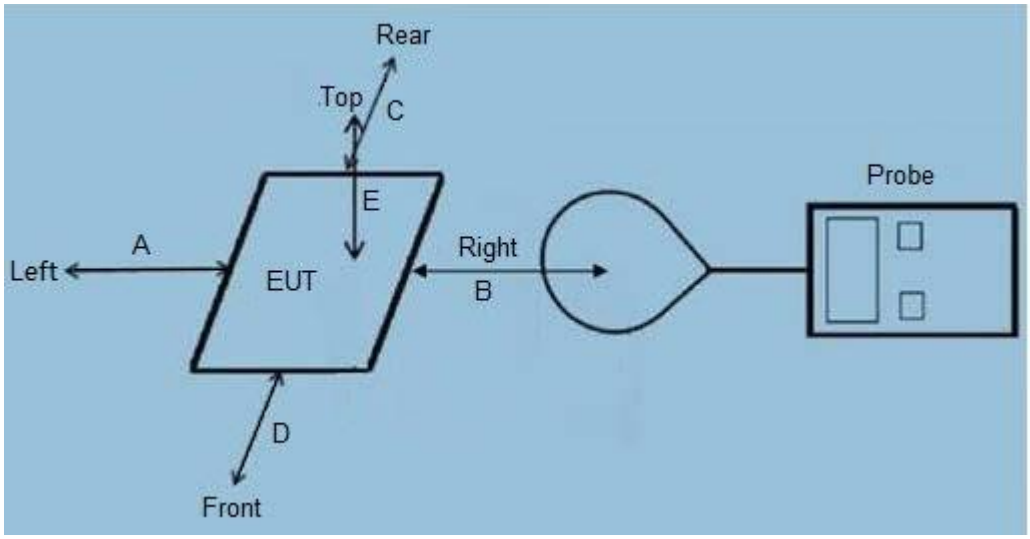
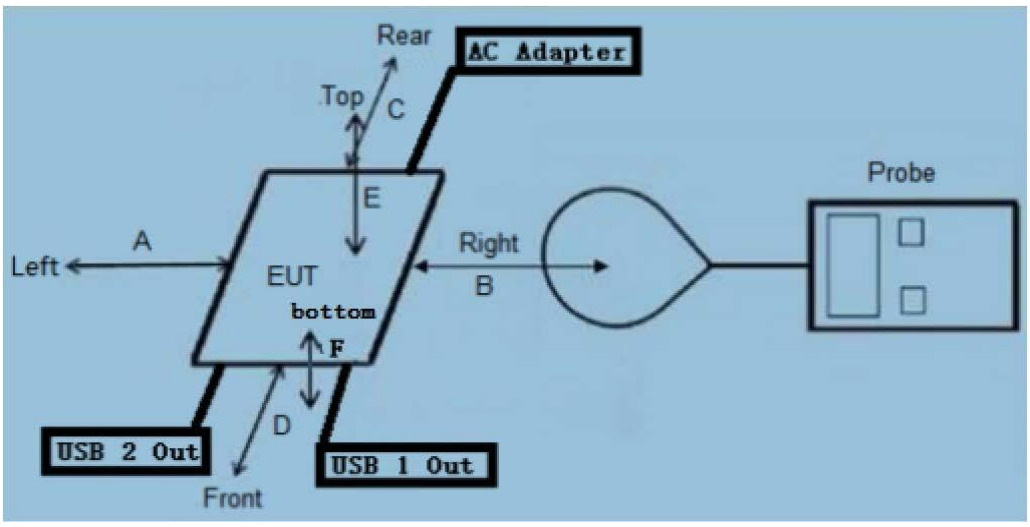
6.3 MEASUREMENT SETUP

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 of

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.

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6.5 MEASUREMENT RESULTS

Mobile devices are evaluated as follows:

Operate Mode	Field Strength	Measured H-Field Strength Values (A/m) Measured E-Field Strength Values (V/m)					FCC Limit	50%_FCC limit
		Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
Mode 1	nT	834.94	935.48	767.64	958.44	915.65	--	--
Mode 1	A/m	0.668	0.75	0.61	0.77	0.73	1.63	0.815
Mode 1	V/m	0.664	0.63	0.74	0.73	0.74	614	307

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

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APPENDIX I: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC12971220701AP03

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

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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.

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