

Nomad Goods, Inc.

MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

Model:

NM01892885, NM01862185
NM01897385

REPORT NUMBER:

211100387SHA-003

ISSUE DATE:

December 23, 2021

DOCUMENT CONTROL NUMBER:

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Applicant: Nomad Goods, Inc.
Address of Applicant: 1187 Coast Village Rd. #638 Santa Barbara, CA 93108, United States

Manufacturer: Nomad Goods, Inc.
Address of Manufacturer: 1187 Coast Village Rd. #638 Santa Barbara, CA 93108, United States

Factory: Zhongshan Zen Factory Ltd.
Address of Factory: 6th.Industrial Area, Nanlang Town, Zhongshan City, Guangdong, China

FCC ID: 2AJYRNM01892885

SUMMARY:

| |
|---|
| The equipment complies with the requirements according to the following standard(s) or Specification: |
|---|

| |
|---------------------------|
| FCC PART 1 SECTION 1.1310 |
|---------------------------|

PREPARED BY:**REVIEWED BY:**

Project Engineer
Sky Yang



Reviewer
Wakeyou Wang

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Revision History

| Report No. | Version | Description | Issued Date |
|------------------|---------|-------------------------|-------------------|
| 211100387SHA-003 | Rev. 01 | Initial issue of report | December 23, 2021 |
| | | | |
| | | | |

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

| | |
|----------------------------|--|
| Product name: | Base Station - Hub Edition MagSafe Global V3 |
| Type/Model: | NM01892885, NM01862185, NM01897385 |
| Description of EUT: | <p>The EUT is Base Station - Hub Edition MagSafe Global V3. The additional model NM01862185 is identical with the test model NM01892885 except the model NM01862185 has a metal hockey puck.</p> <p>The additional model NM01897385 is identical with the test model NM01892885 except the appearance color.</p> |
| Rating: | 12V \equiv 4A |
| Category of EUT: | Class B |
| EUT type: | <input checked="" type="checkbox"/> Table top <input type="checkbox"/> Floor standing |
| Operating Frequency range: | 112- 147 kHz |
| Antenna Type: | Coil antenna |
| Sample received date: | October 23, 2021 |
| Date of test: | October 25, 2021 to October 25, 2021 |

1.2 Description of Test Facility

| | |
|------------|---|
| Name: | Intertek Testing Services Shanghai |
| Address: | Building 86, No. 1198 Qinzhou Road (North), Shanghai 200233, P.R. China |
| Telephone: | 86 21 61278200 |
| Telefax: | 86 21 54262353 |

| | |
|---|---|
| The test facility is recognized, certified, or accredited by these organizations: | CNAS Accreditation Lab Registration No. CNAS L0139 |
| | FCC Accredited Lab Designation Number: CN1175 |
| | IC Registration Lab CAB identifier.: CN0051 |
| | VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252 |
| | A2LA Accreditation Lab Certificate Number: 3309.02 |

All tests were sub-contracted.

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng Science and Technology Park, Longhua District, Shenzhen, China 518109

Telephone: +86 (0) 755 2823 0888

Fax: +86 (0) 755 2823 0886

All tests were sub-contracted at Shenzhen UnionTrust Quality and Technology Co., Ltd, and conducted by Kieron Luo

Reviewed and approved by Wakeyou Wang from Intertek Testing Services Shanghai.

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

CNAS-Lab Code: L9069

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

IC-Registration No.: 21600-1

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The 3m Semi-anechoic chamber of Shenzhen UnionTrust Quality and Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 21600-1.

A2LA-Lab Certificate No.: 4312.01

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC Accredited Lab.

Designation Number: CN1194

Test Firm Registration Number: 259480

2 TEST SPECIFICATIONS

2.1 Standards or specification

FCC PART 1 SECTION 1.1310

KDB 680106 D01 RF Exposure Wireless Charging App v03

2.2 Mode of operation during the test

Within this test report, EUT was tested under all modes and tested under its rating voltage and frequency. Other voltage and frequency are specified if used. The test mode is as follows:

Test Mode 1: Wireless charging mode(10W load on left coi) +USB-C OUT(9V/2A)+USB-A OUT(5V/1A)

Test Mode 2: Wireless charging mode(10W load on right coi) +USB-C OUT(9V/2A)+USB-A OUT(5V/1A)

Test Mode 3: Wireless charging mode(10W load on Middle coi) +USB-C OUT(9V/2A)+USB-A OUT(5V/1A)

Test Mode 4: Wireless charging mode (7.5W load on left coil+7.5W load on right coil) +USB-C OUT(9V/2A)+USB-A OUT(5V/1A)

Test Mode 5: Standby

2.3 Test peripherals list

| Item No. | Name | Band and Model | Description |
|----------|-------------------|----------------------|-------------|
| 1 | Adapter | NOMAD, A481-1204000I | N/A |
| 2 | Mobile phone | Samsung Galaxy 7 | N/A |
| 3 | Mobile phone | Xiaomi, Mi10s | N/A |
| 4 | Cement resistance | N/A | 9V/2A |
| 5 | Metal resistance | N/A | 5V/1A |

2.4 Support Cable list

| Item No | Description | Length (m) | Cable Type |
|---------|--------------|------------|------------|
| 1 | USB Cable | 0.5 | NA |
| 2 | Type-C Cable | 0.5 | NA |

2.5 Record of climatic conditions

| Test Item | Temperature (°C) | Relative Humidity (%) | Pressure (kPa) |
|-------------|------------------|-----------------------|----------------|
| RF Exposure | 25.8 | 56 | 101.7 |

2.6 Instrument list

| Test Equipment List | | | | | | |
|-------------------------------------|--------------------|--------------|-----------|---------------|-------------------------|-----------------------------|
| Used | Equipment | Manufacturer | Model No. | Serial Number | Cal. date (mm dd, yyyy) | Cal. Due date (mm dd, yyyy) |
| <input checked="" type="checkbox"/> | Probe | STT | EHP-50F | SZ186-04 | July 20, 2021 | July 20, 2022 |
| <input checked="" type="checkbox"/> | Probe holder | STT | TR-01 | N/A | N/A | N/A |
| <input checked="" type="checkbox"/> | Optical fiber line | STT | L=5M | N/A | N/A | N/A |

3 MPE Assessment

Test result: Pass

3.1 MPE Assessment Limit

According to 47 CFR §1.1310, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

Limits for Occupational / Controlled Exposure

| Frequency range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm ²) | Averaging Times E ² , H ² or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|---|--|
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842/f | 4.89/f | (900/f)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | / | / | F/300 | 6 |
| 1500-100000 | / | / | 5 | 6 |

Limits for General Population/Uncontrolled Exposure

| Frequency range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm ²) | Averaging Times E ² , H ² or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|---|--|
| 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 |

Note: f = frequency in MHz: * = Plane-wave equivalents power density.

3.2 Testing Procedure

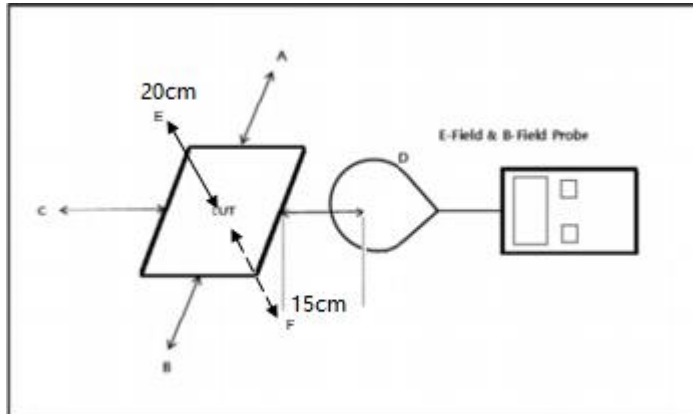
Enabled the EUT to transmit and receive data continue

- The field strength of both E-field and H-field was measured at 15 cm surrounding the device and 20 cm above the top surface using the equipment list above for determining compliance with the MPE requirements of FCC Part 1.1310.
- The RF power density was measured with the battery at 3 different charge conditions: battery at less than 1 % , battery at 50% charger, battery at 99% charger.
- Maximum E-field and H-field measurements were made 15cm from each side of the EUT. Along the side of the EUT and still 15cm away from the edge of the EU T, the field probes were positioned at the location where there is maximum field strength. The maximum E-field and H-field is reported below.
- This device uses a wireless charging circuit for power transfer operating at the frequency of X

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kHz. Thus, the 300 kHz limits were used: E-field Limit = 614 (V/m); H-field limit = 1.63 (A/m).

3.3 Test setup



Note

The RF exposure test is performed in the shield room

The test distance is between the edge of the charger and the geometric center of probe

The aggregate at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated.

3.4 TEST DATA

Worst case Test Mode 3

Test result of E-Field Strength: Fundamental frequency (127.3kHz)

| Test Position | Test distance (cm) | Test result (V/m) | | | Limit (V/m) | Result (Pass/Fail) |
|---------------|--------------------|--------------------|---------------------|---------------------|-------------|--------------------|
| | | <1% Battery status | <50% Battery status | <99% Battery status | | |
| A: Right | 15 | 1.3008 | 1.2925 | 1.2914 | 614 | Pass |
| B: Left | 15 | 0.8498 | 0.8384 | 0.8334 | 614 | Pass |
| C: Front | 15 | 0.9227 | 0.8681 | 0.8857 | 614 | Pass |
| D: Back | 15 | 0.5966 | 0.5842 | 0.5898 | 614 | Pass |
| E: Top | 20 | 0.7327 | 0.6807 | 0.6562 | 614 | Pass |
| F: Bottom | 15 | 0.3658 | 0.3403 | 0.2970 | 614 | Pass |

Test result of Magnetic Field Strength: Fundamental frequency (127.3 kHz)

| Test Position | Test distance (cm) | Test result (A/m) | | | Limit (A/m) | Result (Pass/Fail) |
|---------------|--------------------|--------------------|---------------------|---------------------|-------------|--------------------|
| | | <1% Battery status | <50% Battery status | <99% Battery status | | |
| A: Right | 15 | 0.0825 | 0.0767 | 0.0760 | 1.63 | Pass |
| B: Left | 15 | 0.0627 | 0.0610 | 0.0576 | 1.63 | Pass |
| C: Front | 15 | 0.0538 | 0.0511 | 0.0477 | 1.63 | Pass |
| D: Back | 15 | 0.0387 | 0.0335 | 0.0323 | 1.63 | Pass |
| E: Top | 20 | 0.0485 | 0.0474 | 0.0414 | 1.63 | Pass |
| F: Bottom | 15 | 0.0294 | 0.0256 | 0.0270 | 1.63 | Pass |

Note:

1. Test with 15cm distance from the center of the probe(s) to the edge of the device, 20 cm for top (Position E) test
2. All simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
3. All possible modes of operation were investigated, only the worst-case emissions reported.
4. Because the worst Mode is Test Mode 3, when the product works in Test Mode 3, the base frequency is 127.3kHz. Therefore, the report only reflects the test data for the main frequency of 127.3kHz

3.5 Equipment Approval Considerations

| Requirements of section 5 of KDB680106 D01 RF Exposure Wireless Charging App v03 | Yes/No | Description |
|--|--------|---|
| Power transfer frequency is less than 1 MHz. | Yes | The device operates in the frequency range 112kHz-147kHz |
| Output power from each primary coil is less than or equal to 15 watts. | Yes | The maximum output power of the primary coil is 10W |
| The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time. | Yes | The transmission system consists of three coils, The left and right coils can work simultaneously. Middle Coils Can't work with Right or Left at the same time. |
| Client device is placed directly in contact with the transmitter. | Yes | Client device is placed directly in contact with the transmitter |
| Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion). | Yes | Product is not a portable device. |
| The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit. | Yes | See the test data in section 2.4 of this report |

TEST REPORT**Appendix I: Photograph of test setup**

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

Appendix II: Photograph of equipment under test

Refer to Appendix 2 for EUT external and internal photos.

***** END *****