

RF EXPOSURE REPORT

CERTIFICATE OF CONFORMITY

FCC Rule Part: FCC Part 2 (Section 2.1091)
FCC Part 2 (Section 2.1093)

Report No.: MFBCFP-WTW-P22100200

FCC ID: Q3V-MRS32A

Product: MRS Tubular Motor

Model No.: MRS-32A

Received Date: 2022/10/7

Test Date: 2022/11/17

Issued Date: 2022/12/13

Applicant: Nien Made Enterprise Co., Ltd.

Address: 23F.-1, No. 98, Shizheng N. 7th Rd., Xitun Dist., Taichung City 407, Taiwan

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

FCC Registration / 198487 / TW2021

Designation Number:

Approved by:

Jeremy Lin

Date:

2022/12/13

Jeremy Lin / Project Engineer

This test report consists of 8 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The test results in the report only apply to the tested sample. The test results in this report are traceable to the national or international standards.



Prepared by : Annie Chang / Senior Specialist

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



Table of Contents

Release Control Record	3
1 Certificate.....	4
2 Applicable RF Exposure Limit	5
3 Applicable Evaluation Criteria	6
4 Test Results	7
4.1 RF Exposure.....	7
5 Conclusion.....	7
6 Information of the Testing Laboratories	8



Release Control Record

Issue No.	Description	Date Issued
MFBCFP-WTW-P22100200	Original release.	2022/12/13

1 Certificate

Product: MRS Tubular Motor
Test Model: MRS-32A
Sample Status: Engineering sample
Applicant: Nien Made Enterprise Co., Ltd.
Test Date: 2022/11/17
FCC Rule Part: FCC Part 2 (Section 2.1091)
FCC Part 2 (Section 2.1093)
Standard: KDB 447498 D04 Interim General RF Exposure Guidance v01

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

2 Applicable RF Exposure Limit

§ 1.1310 Radiofrequency radiation exposure limits.

(a) Specific absorption rate (SAR) shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in § 1.1307(b) of this part within the frequency range of 100 kHz to 6 GHz (inclusive).

(b) The SAR limits for occupational/controlled exposure are 0.4 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 8 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit for occupational/controlled exposure is 20 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 6 minutes to determine compliance with occupational/controlled SAR limits.

(c) The SAR limits for general population/uncontrolled exposure are 0.08 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 1.6 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit is 4 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 30 minutes to determine compliance with general population/uncontrolled SAR limits.

(e) Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

➤ Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
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

f = frequency in MHz. * = Plane-wave equivalent power density.

➤ Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
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
300-1,500			f/300	<6
1,500-100,000			5	<6

f = frequency in MHz. * = Plane-wave equivalent power density.

3 Applicable Evaluation Criteria

Exemption Evaluation

1 mW Blanket Exemption – §1.1307(b)(3)(i)(A)

- The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in [paragraph \(b\)\(3\)\(ii\)\(A\)](#) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A).

4 Test Results

4.1 RF Exposure

Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
---------------------------	--------------	------------	-----------

1 mW Blanket Exemption						
Operation Mode	Frequency Band (MHz)	Average Power (mW)	Antenna Gain (dBi)	Maximum ERP (mW)	Limit (mW)	Test Result
GFSK	2415-2459	0.001687	2.8	0.001959	1	Pass

Note:

Calculate the ERP of GFSK from the radiated field strength:

$$\text{ERP (dBm)} = \text{Radiated field strength (dBuV/m)} + 20 \times \text{Log}(d) - 104.77 - 2.15$$

d is the measurement distance, in 3 m.

$$\text{ERP} = 70.3 + 20 \times \text{Log}(3) - 104.77 - 2.15 = -27.08 \text{ dBm (0.001959 mW)}$$

$$\text{Average Power} = \text{ERP (dBm)} - \text{Antenna Gain (dBi)} + 2.15 = -27.73 \text{ dBm (0.001687 mW)}$$

5 Conclusion

Source-base time average power is below Exemption Criteria and/or Routine Evaluation MPE thresholds, therefore the device is compliant FCC RF exposure requirement.

6 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@bureauveritas.com

Web Site: <http://ee.bureauveritas.com.tw>

The address and road map of all our labs can be found in our web site also.

--- END ---