

## RF EXPOSURE REPORT



**Applicant:** HORNCHE CORPORATION  
No. 23, Ln. 350, Nanshang Rd., Guishan Dist., Taoyuan City,  
Taiwan

**Manufacturer:** HORNCHE CORPORATION  
No. 23, Ln. 350, Nanshang Rd., Guishan Dist., Taoyuan City,  
Taiwan

**Product Name:** Easylube Nexus Remote Wireless Control Automatic  
Lubricator

**Brand Name:** Easylube

**Model No.:** 250 Nexus

**Report Number:** TESA2305000273ES

**FCC ID** 2BA73ELNEXUS

**Date of EUT Received:** May 05, 2023

**Issue Date:** January 29, 2024

Approved By

John Yeh

**We hereby certify that:**

The above equipment was evaluated by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091.

The results of this report relate only to the sample identified in this report.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.  
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## Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2305000273ES	00	Original	January 16, 2024	Celery Wei	
TESA2305000273ES	01	1. Revise antenna information 2. Revise Power Density Calculation	January 29, 2024	Celery Wei	*

## Note:

- 1、The remark "\*" indicates modification of the report upon requests from certification body.

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## 1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

### 1.1 Product Description

Product Name:	Easylube Nexus Remote Wireless Control Automatic Lubricator
Brand Name:	Easylube
Model No.:	250 Nexus
EUT Series No.:	4YN1-2
Power Supply:	6Vdc

### 1.2 Evaluation site

Laboratory	Site Address		FCC Designation number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	<input checked="" type="checkbox"/>	No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027	4620A	TW3702
	<input type="checkbox"/>	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028	4620E	
	<input type="checkbox"/>	1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Neihu District, Taipei City, 222 Taiwan.	TW0029	23862	

### 1.3 Antenna Information:

Mode	Antenna Type	Brand	Antenna Model No.	Antenna Gain
NFC	Loop	Easylube	Easylube RFID Module V1.0	N/A
LORA	PCB	Unictron	W935D1	4.5

Note: Antenna information is provided by the applicant.

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## 2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

### 2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	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/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100000	/	/	1.0	30

f = frequency in MHz

\* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

$$S = PG / 4\pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

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## 2.2 Power Density Calculation (Worst Case)

### FCC Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. Output Power Include Tolerance (dBm)	Antenna Gain (dBi)	Max. EIRP (mW)	Power Density (PD) (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Pass / Fail	Power Density / Limit
NFC	13.56	20	-	-	0.000000255	0.000000001	0.979	Pass	0.000
LoRa_Hybrid	902.30	20	17.5	4.50	158.49	0.032	0.602	Pass	0.053

\*NFC will not transmit with LoRa simultaneously

### NFC

Frequency (MHz)	E-FIELD dBuV/m	Test Distance (m)	EIRP (dBm)	EIRP (mW)
13.56	9.22	30	-65.93757	0.000000255

Note:

$$\text{EIRP (dBm)} = (\text{E-FIELD (dBuV/m)} + 20 \log(d(\text{m})) - 104.7$$

$$\text{EIRP (mW)} = (10^{(\text{EIRP (dBm)})/10})$$

**Note:** For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

~ End of Report ~

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