

CERTIFICATE of Conformity

Reference No. : KPL2312039526879Y-9EC

Applicant : Yuyao Peipei Automotive Products Factory
Address : 147 Longchang South Road, Xiejia Road Village, Simen Town,
Yuyao City,Zhejiang Province

Manufacturer : Yuyao Peipei Automotive Products Factory
Address : 147 Longchang South Road, Xiejia Road Village, Simen Town,
Yuyao City,Zhejiang Province

Product : Portable inflation pump
Model(s) : 006

The submitted products have been tested by us with the listed standards and found in compliance with the following European Directives:

The EMC Directive 2014/30/EU

**EN IEC 55014-1:2021, EN IEC 61000-3-2:2019+A1:2021
EN 61000-3-3:2013+A1:2019+A2:2021, EN IEC 55014-2:2021**

The tests were performed in normal operation mode. The test results apply only to the particular sample tested and to the specific tests carried out. This certificate applies specifically to the sample investigated in our test reference number only.

The CE markings as shown below can be affixed on the product after preparation of necessary technical documentation.

Other relevant Directives have to be observed.



Date of issue:Oct.27,2023


Elmo Chen
Manager

材料安全数据表

Material Safety Data Sheet

产品名称: 锂离子电芯
Name of Products: Lithium ion Cell

委托单位: 湖南沃尔顿新能源科技有限公司
Applicant: Hunan Worlds New Energy Technology Co., LTD.

生产单位: 湖南沃尔顿新能源科技有限公司
Factory: Hunan Worlds New Energy Technology Co., LTD.

检测人 Tester 	审核人 Reviewer 	批准人 Approver 
项目工程师 / Project Engineer	资深工程师 / Senior Engineer	主管工程师 / Chief Engineer

广东联鼎检测科技有限公司
GUANGDONG UTL CO., LTD.



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1. Identification of the product and supplier (产品和厂商信息)

样品名称 Name of goods	锂离子电芯 Lithium ion Cell
样品型号 Type/Model	ICR18650EA
规格 Rating	3.6V, 2000mAh, 7.2Wh
委托单位 Commissioned by	湖南沃尔顿新能源科技有限公司 Hunan Worlds New Energy Technology Co., LTD.
委托单位地址 Commissioner address	湖南省永州市宁远县文庙街道三合园村（循环经济产业园） (Circular Economy Industrial Park) Sanheyuan Village, Wenmiao Street, Ningyuan County, Yongzhou City, Hunan Province
生产厂 Manufacturer's name	湖南沃尔顿新能源科技有限公司 Hunan Worlds New Energy Technology Co., LTD.
生产厂地址 Manufacturer address	湖南省永州市宁远县文庙街道三合园村（循环经济产业园） (Circular Economy Industrial Park) Sanheyuan Village, Wenmiao Street, Ningyuan County, Yongzhou City, Hunan Province
鉴定依据 Inspection according to	联合国《关于危险品货物运输的建议书》 UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS"
紧急联系电话 Emergency telephone call	+86-15889621076
接样日期 / Receiving date: 2022-03-20	签发日期 / Date of issue: 2022-03-23



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2. Composition Information (成分/组成信息)

化学成分 Chemical Composition	化学式 Chemical Formula	重量百分比 Weight(%)	CAS编号 CAS Number
镍钴锰酸锂/ Lithium Nickel Cobalt Manganese Oxide	$\text{LiNi}_x\text{Co}_y\text{Mn}_{1-x-y}\text{O}_2$	31.3	182442-95-1
聚偏氟乙烯/ Polyvinylidene Fluoride (PVDF)	$(\text{C}_2\text{H}_2\text{F}_2)_n$	0.5	24937-79-9
铝/ Aluminium	Al	4.4	7429-90-5
石墨/ Graphite	$\text{C}_{24}\text{X}_{12}$	17.6	7782-42-5
丁苯橡胶/ Styrene-Butadiene Rubber (SBR)	$(\text{C}_8\text{H}_8.\text{C}_4\text{H}_6)_x$	0.4	61789-96-6
羧甲基纤维素/ Carboxymethylcellulose	$\text{C}_8\text{H}_{16}\text{O}_8$	0.2	9000/11/7
铜/ Copper	Cu	9.9	7440-50-8
镍/ Nickel	Ni	5.6	7440-02-0
六氟磷酸锂/ Lithium Hexafluorophosphate	LiPF_6	12.3	21324-40-3
聚乙烯/ Polyethylene	$(\text{C}_2\text{H}_4)_n$	2.2	9002-88-4
钢/ Steel	--	14.9	--
聚丙烯/ Polypropylene	$(\text{C}_3\text{H}_6)_n$	0.7	9003-07-0

3. Hazards Identification (危险性概述)

爆炸危险性 Explosive risk	该物品不属于爆炸危险品 This article does not belong to the explosion dangerous goods
易燃危险性 Flammable risk	该物品不属于易燃危险品 This article does not belong to the flammable material
氧化危险性 Oxidation risk	该物品不属于氧化危险品 This article does not belong to the oxidation of dangerous goods
毒害危险性 Toxic risk	该物品不属于毒害危险品 This article does not belong to the toxic dangerous goods
放射危险性 Radioactive risk	该物品不属于放射危险品 This article does not belong to the radiation of dangerous goods
腐蚀危险性 Mordant risk	该物品不属于腐蚀危险品 This article does not belong to the corrosion of dangerous goods
其他危险性 other risk	该电池瓦时率为7.2Wh, 属于锂离子电池(包括锂离子聚合物电池) Watt hour rate 7.2Wh, which belong to the Lithium ion batteries (including lithium ion polymer batteries)



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4. First aid measures (急救措施)

眼睛:

万一接触, 立即用大量的清水冲洗至少15分钟, 翻起上下眼睑, 直到化学的残留物消失为止, 迅速就医。

Eye

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

皮肤:

万一接触, 用大量水冲洗至少15分钟, 同时除去污染的衣物和鞋子, 迅速就医。

Skin

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

吸入:

立即从暴露处移至空气清新处, 如果呼吸困难给予输氧, 立即就医。

Inhalation

Remove from exposure and move to fresh air immediately. Use oxygen if available.

食入:

引用两杯牛奶或水。如果当事人仍然清晰可以采取催吐的方法, 并且立即就医。

Ingestion

Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

5. Fire-fighting measures (消防措施)

燃点: 不适用

Flash Point: N/A.

自燃温度: 不适用

Auto-ignition Temperature: N/A.

灭火介质: 大量水(降温), 二氧化碳

Extinguishing Media: Water, CO2.

特殊灭火程序: 自给式呼吸器

Special Fire-Fighting Procedures: Self-contained breathing apparatus.

异常火灾或爆炸: 当电芯暴露于过热的环境中时, 安全阀可能会打开。

Unusual Fire and Explosion Hazards:

Cell may vent when subjected to excessive heat-exposing battery contents.

燃烧产生的危险物品: 一氧化碳, 二氧化碳, 锂氧化物烟气

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, lithium oxide fumes.



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6. Accidental release measures (泄漏应急处理)

为防止电池材料泄露或释放采取的措施

如果电池内部材料泄露，试验人员应立刻撤离试验区直到烟气消散。将通风设备打开吹散危险性气体。用抹布擦净试验区，清除溢出的液体，将泄露电池放进塑料袋中，然后放进钢制容器。避免皮肤和眼睛接触或吸入有害气体。

Steps to be Taken in case Material is Released or Spilled

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

废弃物处置方法

建议将电池完全放电，消耗电池内部的锂金属，并且深埋于土壤中。

Waste Disposal Method

It is recommended to discharge the battery to the end, to use up the metal lithium inside the battery, and to bury the discharged battery in soil.

7. Handling and storage (操作处置和储存)

禁止打开、毁坏或焚烧电池，因为电池有可能在这些处理过程中发生爆炸、破裂或泄露等事故。

禁止将电池短路、过充、强制放电或扔入火中。禁止挤压刺穿电池或将电池浸入溶液中。

The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire.

Do not crush or puncture the battery, or immerse in liquids.

操作处置和储存中的防范措施

禁止物理或电滥用，禁止高温储存，最好将电池储存在阴凉、干燥、通风及温度变化较小的环境中。

禁止将电池接触加热设备或将电池直接暴露与阳光中。

Precautions to be taken in handling and storing

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

其他要注意的防范措施

拆解、挤压、直接放入火中或高温条件下，电池可能发生爆炸和燃烧。禁止短接或将电池正负极错误的安装在设备中。

Other Precautions

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures.

Do not short or install with incorrect polarity.



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8. Exposure controls/personal protection (接触控制/个人防护)

呼吸防护

当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭窄空间内。正常操作条件下，呼吸保护是不必要的。

Respiratory Protection

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use.

通风条件

正常使用条件下不需要。

Ventilation

Not necessary under conditions of normal use.

防护手套

正常使用条件下不需要。

Protective Gloves

Not necessary under conditions of normal use.

其他防护服或设备

正常使用条件下不需要。

Other Protective Clothing or Equipment

Not necessary under conditions of normal use.

电池开阀试验时应做好个人防护

呼吸防护，防护手套，防护服装和有护边的安全玻璃罩都是要准备的。

Personal Protection is recommended for venting battery

Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.



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9. Physical and chemical properties (物理和化学特性)

外观: 圆柱形

Appearance: Cylindrical shape

报告编号: 4789590297-1

Ref. No.: 4789590297-1

气味: 泄漏时, 有醚的气味。

Odour: If leaking, smells of medical ether.

酸碱度: 不适用。

pH: Not applicable as supplied.

燃点: 除单个电芯暴露试验外其他不适用。

Flash Point: Not applicable unless individual components exposed.

可燃性: 除单个电芯暴露试验外其他不适用。

Flammability: Not applicable unless individual components exposed.

相对密度: 除单个电芯暴露试验外其他不适用。

Relative density: Not applicable unless individual components exposed.

溶解性(水溶性): 除单个电芯暴露试验外其他不适用。

Solubility (water): Not applicable unless individual components exposed.

溶解性(其他): 除单个电芯暴露试验外其他不适用。

Solubility (other): Not applicable unless individual components exposed.

10. Stability and reactivity (稳定性和反应活性)

稳定性: 产品在第7节所述的条件下稳定。

Stability: Product is stable under conditions described in Section 7.

应避免的条件: 加热70°C以上或焚烧、变形、毁坏、粉碎、拆卸、过充电、短路。

长时间暴露在潮湿的条件下。

Conditions to avoid: Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.

应避免的材料: 氧化剂, 碱, 水。

Materials to avoid: Oxidising agents, alkalis, water.

危险分解物: 有毒烟雾, 并可能形成过氧化物。

Hazardous Decomposition Products: Toxic Fumes, and may form peroxides.

聚合危害: 不适用

Hazardous Polymerization: N/A.

如果发生泄露, 避免与强氧化剂, 无机酸, 强碱, 卤代烃接触。

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.



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11. Toxicological information (毒理性资料)

标志及症状: 无, 除非电池破裂。

Signs & symptoms: None, unless battery ruptures.

内部物质暴露的情况下, 蒸汽烟雾可能对眼睛和皮肤的刺激性。

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

吸入: 对肺有刺激性。

Inhalation: Lung irritant.

皮肤接触: 对皮肤刺激性。

Skin contact: Skin irritant

眼睛接触: 对眼睛有刺激性。

Eye contact: Eye irritant

食入: 吞下中毒。

Ingestion: Poisoning if swallowed

下列情况下健康状况会恶化: 万一发生与电池内部材料接触的事故, 轻微或严重的刺激, 都可能使皮肤出现干燥和灼烧的感觉, 并且损坏靶器官(肝脏, 肾脏)的神经。

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to severe irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

12. Ecological information (生态学资料)

对哺乳动物的影响: 目前未知。

Mammalian effects: None known at present.

生态毒性: 目前未知。

Eco-toxicity: None known at present.

生物体内积累: 慢慢地生物降解。

Bioaccumulation potential: Slowly Bio-degradable.

环境危害: 目前没有已知的环境危害。

Environmental fate: None known environmental hazards at present.

13. Disposal consideration (废弃处置)

不要焚烧, 或使电池温度超过70°C, 这种滥用可导致泄漏和/或电池爆炸。按照相应的地方性法规处理。

Do not incinerate, or subject cells to temperature in excess of 70°C, Such abuse can result in loss of seal leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.



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14. Transport information (运输信息)

运输标签: 锂电池操作标签

Label for conveyance: Lithium Battery Mark.

UN编号: UN3480 或 UN3481

UN Number: UN3480 or UN3481

包装等级: 不适用

Packing Group: N/A.

EmS编号: F-A, S-I

EmS No: F-A, S-I

海洋污染物: 无

Marine pollutant: No

正确的装运名称: 1) 锂离子电池; 2) 锂离子电池伴随设备包装在一起; 3) 锂离子电池装在设备中 (包括锂离子聚合物电池)。

Proper Shipping name: 1) Lithium ion batteries; 2) Lithium ion batteries packed with equipment; 3) Lithium ion batteries contained in equipment. (including Lithium ion polymer batteries)

危险分类: 货物应遵守IATA第63版DGR手册包装说明965-967第II节(或者IB节)规定(2022年版), 和特殊规定188国际海运危险货物规则(Amdt. 40-20)2020版, 包括通过UN38.3测试手册要求。

Hazard Classification: The goods shall be complied with the requirements of Section II (or Section IB) of Packing Instructions 965~967 of 63rd DGR Manual of IATA (2022 Edition) and Special Provision 188 of IMDG CODE (Amdt. 40-20)2020 Edition, including the passing of the UN38.3 test.



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15. Regulation information (法规信息)

法律信息

Law information

- 《危险物品规则》
- 《Dangerous Goods Regulations》
- 《对危险货物运输的有关规定的建议》
- 《Recommendations on the Transport of Dangerous Goods Model Regulations》
- 《国际海运危险货物规则》
- 《International Maritime Dangerous Goods》
- 《危险品安全运输技术指令》
- 《Technical Instructions for the Safe Transport of Dangerous Goods》
- 《危险货物分类和品名编号》
- 《Classification and code of dangerous goods》
- 《职业安全卫生法》
- 《Occupational Safety and Health Act》 (OSHA)
- 《有毒物质控制法》
- 《Toxic Substance Control Act》 (TSCA)
- 《消费产品安全法》
- 《Consumer Product Safety Act》 (CPSA)
- 《联邦环境污染控制法》
- 《Federal Environmental Pollution Control Act》 (FEPCA)
- 《石油污染法案》
- 《The Oil Pollution Act》 (OPA)
- 《超级基金修正案和再授权法案III(302/311/312/313)》
- 《Superfund Amendments and Reauthorization Act TitleIII (302/311/312/313)》 (SARA)
- 《资源保护及恢复法案》
- 《Resource Conservation and Recovery Act》 (RCRA)
- 《安全饮用水法》
- 《Safety Drinking Water Act》 (CWA)
- 《加州65提案》
- 《California Proposition 65》
- 《美国联邦法规》
- 《Code of Federal Regulations》 (CFR)

根据所有联邦、州和地方法律。

In accordance with all Federal, State and local laws.

16. Other information (其他信息)

本文件仅对由委托方湖南沃尔顿新能源科技有限公司提供的，并由湖南沃尔顿新能源科技有限公司生产的电池(ICR18650EA)有效。该电池的成分信息由委托方提供并承诺其完整性和准确性。用户应仔细阅读此文件，并按照正确的方法使用电池，如因电池使用不当造成的损害或损失，广东联鼎检测科技有限公司(UTL)不承担任何责任。

This file is only effective to the batteries (ICR18650EA) provided by Hunan Worlds New Energy Technology Co., LTD. which manufactured by Hunan Worlds New Energy Technology Co., LTD. The commissioner provides the composition information of batteries, and promises its integrity and accuracy. Users should read this file carefully, and use the batteries in correct method. GUANGDONG UTL CO., LTD. (UTL) doesn't assume responsibility for any damage or loss because of misuse of batteries.



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Photos

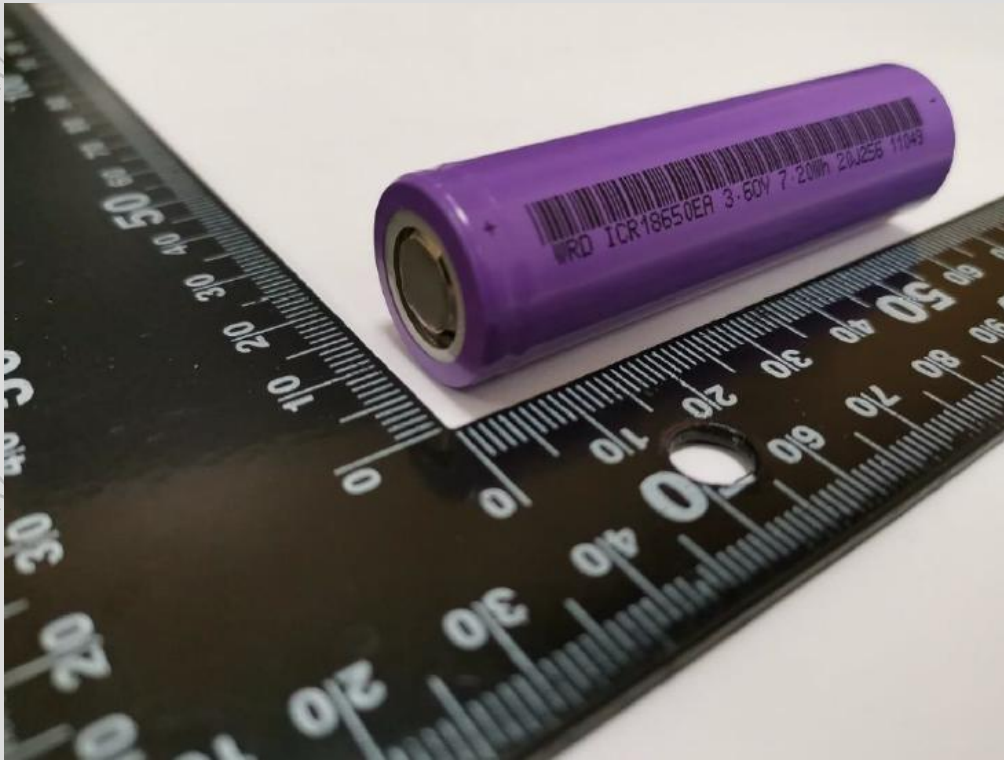


Figure 1 Overall view I of cell (电芯图I)



Figure 2 Overall view II of cell (电芯图II)



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注意事项 Important

1. 未经本试验室书面同意，不得复制或部分地复制本报告。
Nobody is allowed to photocopy or partly photocopy this test report without written permission of UTL.
2. 本报告无批准人、审核人及检测人签名无效。
The test report is invalid without the signatures of Approver, Reviewer and Tester.
3. 本报告涂改无效。
The test report is invalid if altered.
4. 对检验报告若有异议，应于收到报告之日起十五天内向检验单位提出。
Objections to the test report must be submitted to UTL within 15 days.
5. 本报告中以点号代替小数点。
Throughout this report a point is used as the decimal separator.
6. 本报告仅对送检样品负责。
The test report is valid for the tested samples only.
7. 本报告并未授权许可申请单位使用UTL任何UTL的名称、商标、标识等。
The test report does not grant applicant the use of UTL name, trademark or label.
8. 任何情况下检测单位的赔偿责任都不会超过检测单位就本次检测所收取的检测费用。
UTL's liability under no circumstance will exceed the testing fee received from applicant for test conducted hereof this testing report.
9. 检测数据和结果不具备社会证明性作用。
The test data and results do not have social proof function.

***** 报告结束 End of Test Report *****





Yuyao Peipei Automotive Products Factory



EMC REPORT

Prepared For :	Yuyao Peipei Automotive Products Factory 147 Longchang South Road, Xiejia Road Village, Simen Town, Yuyao City, Zhejiang Province
Product Name:	Portable inflation pump
Main Test Model:	006
Additional Model:	/
Prepared By: :	Ningbo KPL Technology Co.,Ltd. Building No.599, Jiangnan Road, National Hi-Tech Zone, Ningbo, Zhejiang, China.
Test Date:	Oct.23- Oct.27,2023
Date of Report :	Oct.27,2023
Report No :	KPL2312039526879Y-9EC

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TEST REPORT DECLARATION

Applicant : Yuyao Peipei Automotive Products Factory
 Address : 147 Longchang South Road, Xiejia Road Village, Simen Town,
 Yuyao City,Zhejiang Province
 EUT Description : Portable inflation pumpModel
 Number : 006

Test Standards:

- EN IEC 55014-1:2021
- EN IEC61000-3-2:2019+A1:2021
- EN 61000-3-3:2013+A1:2019+A2:2021
- EN IEC 55014-2:2021

The EUT described above is tested by Ningbo KPL Technology Co.,Ltd. EMC Laboratory to determine the maximum emissions from the EUT and ensure the EUT to be compliance with the immunity requirements of the EUT. Ningbo KPL Technology Co.,Ltd. EMC Laboratory is assumed full responsibility for the accuracy of the test results. Also, this report shows that the EUT technically complies with the 2014/30/EU directive and its amendment requirements. The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Prepared by : Jacky Zhang
 Assistant

Tested by : Toby Zhong
 Test Engineer

Reviewer : Tom chen
 Supervisor

Approved & Authorized Signer : Salon
 Salon/Manager



1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
Power Line Conducted Emission Test	PASS
Disturbance Power Test	PASS
Harmonic Current Emission Test	PASS
Voltage Fluctuations & Flicker Test	PASS
Electrostatic Discharge Test	PASS
RF Field Strength Susceptibility Test	PASS
Electrical Fast Transient/Burst Test	PASS
Surge Test	PASS
Injected Currents Susceptibility Test	PASS
Voltage Dips And Interruptions Test	PASS

2. GENERAL INFORMATION

2.1. Report information

- 2.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that KPL approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that KPL in any way guarantees the later performance of the product/equipment.
- 2.1.2. The sample/s mentioned in this report is/are supplied by Applicant, KPL therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 2.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through KPL, unless the applicant has authorized KPL in writing to do so.

2.2. Measurement Uncertainty

(95% confidence levels, k=2)

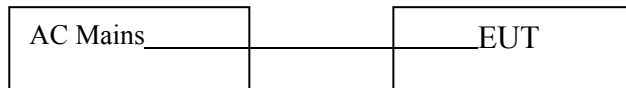
Test Item	Uncertainty
Uncertainty for Conduction emission test	2.62dB
Uncertainty for Power disturbance Test	3.0dB

3. PRODUCT DESCRIPTION

3.1.EUT Description

Description : Portable inflation pump
Applicant : Yuyao Peipei Automotive Products
Factory : 147 Longchang South Road, Xiejia Road Village, Simen Town,
Yuyao City,Zhejiang Province
Manufacturer : Yuyao Peipei Automotive Products Factory
147 Longchang South Road, Xiejia Road Village, Simen Town,
Yuyao City,Zhejiang Province
Model Number : 006

3.2.Block Diagram of EUT Configuration



3.3.Operating Condition of EUT

Test mode 1: ON

3.4.Test Conditions

Temperature: 23-26°C
Relative Humidity: 55-68 %

3.5.Modifications

No modification was made.

3.6.Abbreviations

AC	Alternating Current
AMN	Artificial Mains Network
DC	Direct Current
EM	ElectroMagnetic
EMC	ElectroMagnetic Compatibility
EUT	Equipment Under Test
IF	Intermediate Frequency
RF	Radio Frequency
rms	root mean square
EMI	Electromagnetic Interference
EMS	Electromagnetic Susceptibility

3.7.Performance Criterion

Criterion A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

Criterion B: After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended.

Criterion C: Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

4. TEST EQUIPMENT USED

4.1.For Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS30	828985/018	Dec. 31, 23	1 Year
2.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	Dec. 31, 23	1 Year
3.	L.I.S.N.	Rohde & Schwarz	ESH2-Z5	834549/005	Dec. 31, 23	1 Year
4.	Conical	Emtek	N/A	N/A	N/A	N/A
5.	Voltage Probe	Schwarzbeck	TK9416	N/A	Dec. 31, 23	1 Year
6.	Coaxial Switch	Anritsu	MP59B	6100214550	Dec. 31, 23	1 Year

4.2.For Disturbance Power Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS30	828985/018	Dec. 31, 23	1 Year
2.	Power Clamp	Rohde & Schwarz	MDS21	833711/025	Dec. 31, 23	1 Year
3.	Coaxial Switch	Anritsu	MP59B	6100214550	Dec. 31, 23	1 Year

4.3.For Harmonic / Flicker Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Harmonic and Flicker analyzer	Laplace	AC2000A	309709	Dec. 31, 23	1 Year

4.4.For Electrostatic Discharge Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	ESD Tester	HAEFELY	PSD 1600	H911'292	Dec. 31, 23	1 Year

4.5.For RF Strength Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Signal Generator	HP	8648A	3633A02081	Dec. 31, 23	1 Year
2.	Amplifier	A&R	500A100	17034	NCR	NCR
3.	Amplifier	A&R	100W/1000M1	17028	NCR	NCR
4.	Isotropic Field Monitor	A&R	FM2000	16829	NCR	NCR
5.	Isotropic Field Probe	A&R	FLW220-240100	16755	Dec. 31, 23	1 Year
6.	Biconic Antenna	EMCO	3108	9507-2534	NCR	NCR
7.	Log-periodic Antenna	A&R	AT1080	16812	NCR	NCR
8.	PC	N/A	486DX2	N/A	N/A	N/A

4.6.For Electrical Fast Transient/Burst Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Burst Tester	HAEFELY	PEFT 4010	080981-16	Dec. 31, 23	1 Year

4.7.For Surge Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Surge Tester	HAEFELY	PSURGE4.1	080107-04	Dec. 31, 23	1 Year

4.8.For Injected Currents Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Simulator	EMTEST	CWS 500C	0900-12	Dec. 31, 23	1 Year
2.	CDN	EMTEST	CDN-M2	510010010010	Dec. 31, 23	1 Year
3.	VDN	EMTEST	CDN-M3	0900-11	Dec. 31, 23	1 Year
4.	Injection Clamp	EMTEST	F-2031-23MM	368	Dec. 31, 23	1 Year
5.	Attenuator	EMTEST	ATT6	0010222a	Dec. 31, 23	1 Year

4.9.For Magnetic Field Immunity Test

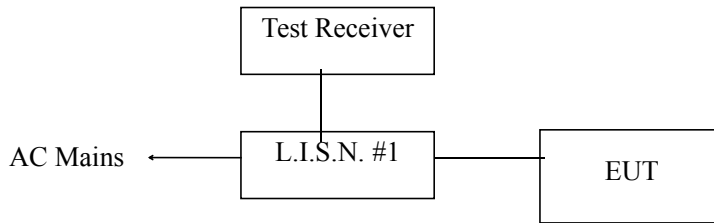
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Magnetic Field Tester	HEAFELY	MAG100.1	083858-10	Dec. 31, 23	1 Year

4.10.For Voltage Dips and Interruptions Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Dips Tester	HEAFELY	PLINE 1610	083732-18	Dec. 31, 23	1 Year

5. POWER LINE CONDUCTED EMISSION TEST

5.1. Block Diagram of Test Setup



5.2. Test Standard

EN IEC 55014-1:2021

5.3. Power Line Conducted Emission Limit

	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	59 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
 2. The lower limit shall apply at the transition frequencies.

5.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet EN55014 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.1. EUT Information

Model Number : 006
 Serial Number : N/A
 Manufacturer : Yuyao Peipei Automotive Products Factory

5.5. Operating Condition of EUT

- 5.5.1. Setup the EUT and simulators as shown in Section 5.1.
- 5.5.2. Turn on the power of all equipments.
- 5.5.3. Let the EUT work in test modes (on) and test it.

5.6. Test Procedure

The EUT is put on the ground and connected to the AC mains through a Artificial Mains Network (AMN). This provided 50ohm-coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the EN55014-1 regulations during conducted emission test.

The bandwidth of the test receiver is set at 9kHz.

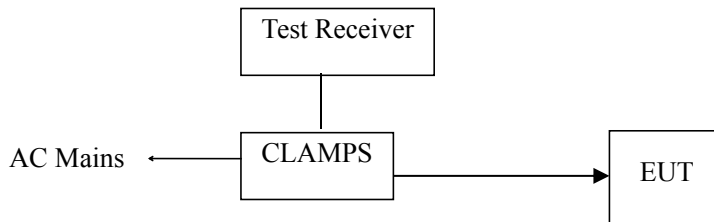
The frequency range from 150 kHz to 30 MHz is investigated. and all the scanning waveform is put in **Appendix I**.

5.7. Test Result

PASS.

6. DISTURBANCE POWER TEST

6.1. Block Diagram of Test Setup



(EUT: Portable inflation pump)

6.2. Disturbance Power Limit

All emanations from devices or system including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Frequency MHz	Interference Power Limits dB(pW)	
	Quasi-peak Value	Average Value
30 ~ 300	45 Increasing Linearly with Frequency to 55 (Q.P.)	35 Increasing Linearly with Frequency to 45 (A.V.)

6.3. EUT Configuration on Test

The EN 55014 regulations test method must be used to find the maximum emission during radiated emission test.

The configuration of EUT is the same as used in conducted emission test. Please refer to Section 3.2

6.4. Operating Condition of EUT

Same as conducted emission test, which is listed in Section 5.1., except the test set up replaced as Section 6.1.

6.5. Test Procedure

The EUT is placed on the ground and away from other metallic surface at least 0.4m. It is connected to the power mains through an extension cord of 6m min. The absorber clamp clamps the cord and moves from the far end to the EUT to measure the disturbing energy emitted from the cord.

The bandwidth of the test receiver is set at 120kHz.

All the test results are listed in Section 6.6.

The frequency spectrum from 30 MHz to 300 MHz is investigated.

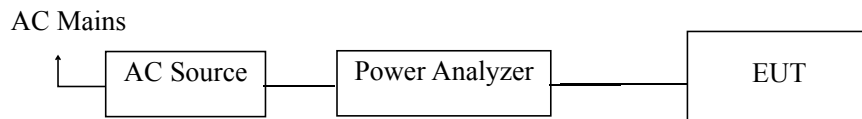
As the peak value is too low against the limit, so the quasi-peak value and average value have omitted. All the scanning waveforms are attached in **Appendix II**.

6.6. Disturbance Power Test Result

PASS.

7. HARMONIC CURRENT EMISSION TEST

7.1. Block Diagram of Test Setup



7.2. Test Standard and Limit

7.2.1. Test Standard

7.2.2. EN IEC61000-3-2:2019+A1:2021 Limits

Table 12 Harmonic Current Test Limit (Class A)

Harmonic order (n)	Maximum permissible harmonic current (A)
Odd harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
$15 \leq n \leq 39$	$0.15 \times 15/n$
Even harmonics	
2	1.08
4	0.43
6	0.30
$8 \leq n \leq 40$	$0.23 \times 8/n$

7.3. Test Procedure

The power cord of the EUT is connected to the output of the test system. Turn on the Power of the EUT and use the test system to test the harmonic current level.

7.4. Test Results

PASS.

8. VOLTAGE FLUCTUATIONS & FLICKER TEST

8.1. Block Diagram of Test Setup

Same as Section 7.1..

8.2. Test Standard

EN 61000-3-3:2013+A1:2019+A2:2021

8.3. Operating Condition of EUT

Same as Section 7.3.. The power cord of the EUT is connected to the output of the test system. Turn on the power of the EUT and use the test system to test.

Flicker Test Limit

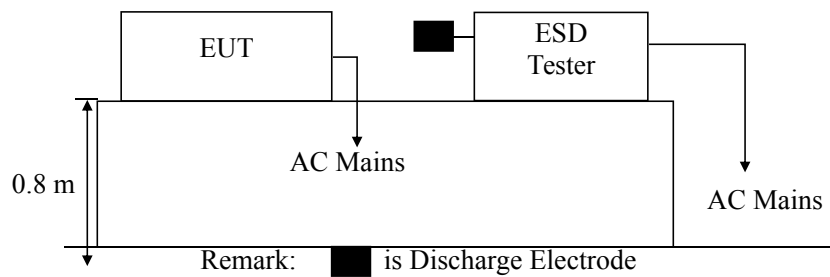
Test items	Limits
Pst	1.0
dc	3.3%
dmax	4.0%
dt	Not exceed 3.3% for 500ms

8.4. Test Results

PASS.

9. ELECTROSTATIC DISCHARGE TEST

9.1. Block Diagram of ESD Test Setup



9.2. Test Standard

EN IEC 55014-2:2021 (EN 61000-4-2:2009)
 Severity Level 3 for Air Discharge at 8KV
 Severity Level 2 for Contact Discharge at 4KV

9.3. Severity Levels and Performance Criterion

9.3.1. Severity level

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X.	Special	Special

9.3.2. Performance criterion: B

9.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

9.5. Operating Condition of EUT

- 9.5.1. Setup the EUT as shown in Section 9.1..
- 9.5.2. Turn on the power of all equipments.
- 9.5.3. Let the EUT work in test mode (on) and test it.

9.6. Test Procedure

9.6.1. Air Discharge:

This test is done on a non-conductive surfaces. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

9.6.2. Contact Discharge:

All the procedure shall be same as Section 9.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

9.6.3. Indirect discharge for horizontal coupling plane

At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

9.6.4. Indirect discharge for vertical coupling plane

At least 20 single discharge shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

9.7. Test Results

PASS.

Please refer to the following page.

Electrostatic Discharge Test Results

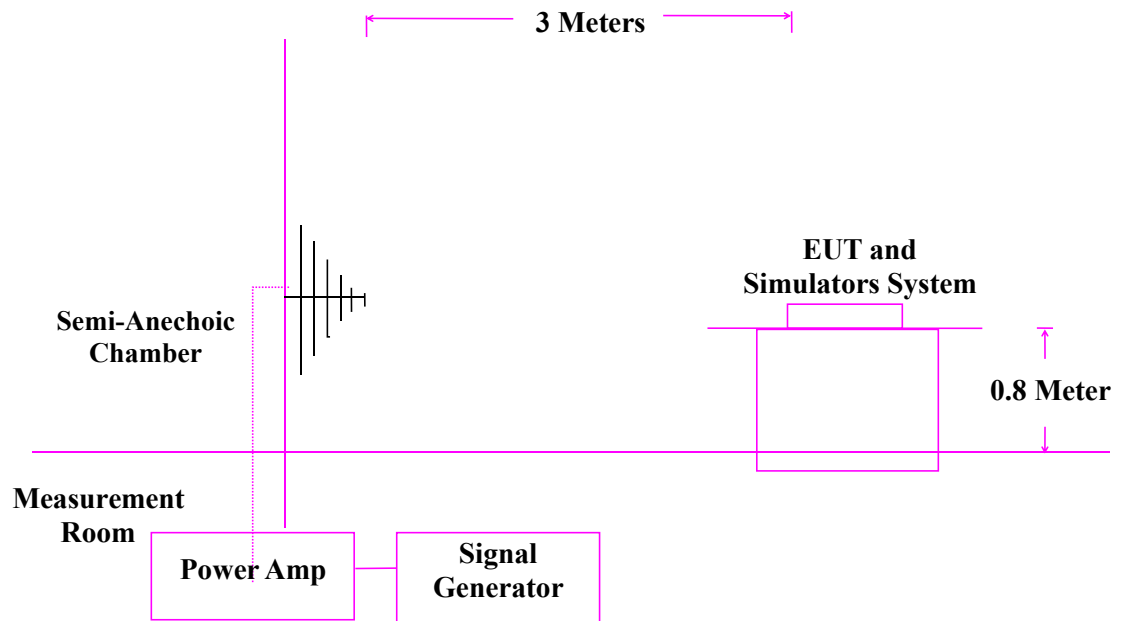
Ningbo KPL Technology Co.,Ltd.

<i>Applicant</i> : Yuyao Peipei Automotive Products Factory	<i>Test Date</i> : Oct.27,2023	
<i>EUT</i> : Portable inflation pump	<i>Temperature</i> : 22°C	
<i>M/N</i> : 006	<i>Humidity</i> : 50%	
<i>Power Supply</i> : -	<i>Test Mode</i> : on	
<i>Test Engineer</i> :		
<i>Air Discharge: ±8KV For each point positive 10 times and negative 10 times discharge.</i>		
<i>Contact Discharge: ±4KV</i>		
Location	Kind <i>A-Air Discharge</i> <i>C-Contact Discharge</i>	Result
<i>Slots</i>	<i>A</i>	<i>PASS</i>
<i>Metal Parts</i>	<i>C</i>	<i>PASS</i>
<i>HCP</i>	<i>C</i>	<i>PASS</i>
<i>VCP</i>	<i>C</i>	<i>PASS</i>

Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).

10.RF FIELD STRENGTH SUSCEPTIBILITY TEST

10.1.R/S Test Setup



10.2.Test Standard

EN IEC 55014-2:2021 (EN 61000-4-3:2006 + A1:2008 + A2:2010)
Severity Level 2 at 3V / m

10.3.Severity Levels and Performance Criterion

10.3.1.Severity level

Level	Field Strength V/m
1.	1
2.	3
3.	10
X.	Special

10.3.2.Performance criterion : A

10.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2..

10.5.Operating Condition of EUT

Setup the EUT as shown in Section 10.1.. The operating condition of EUT are listed in section 3.3.

10.6.Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a CCD camera is used to monitor the EUT.

All the scanning conditions are as follows :

Condition of Test	Remarks
1. Fielded Strength	3 V/m (Severity Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80 - 1000 MHz, 1.4GHz-2.7GHz
4. Sweeping time of radiated	0.0015 decade/s
5. Dwell Time	1 Sec.

10.7.Test Results

PASS.

Please refer to the following page.

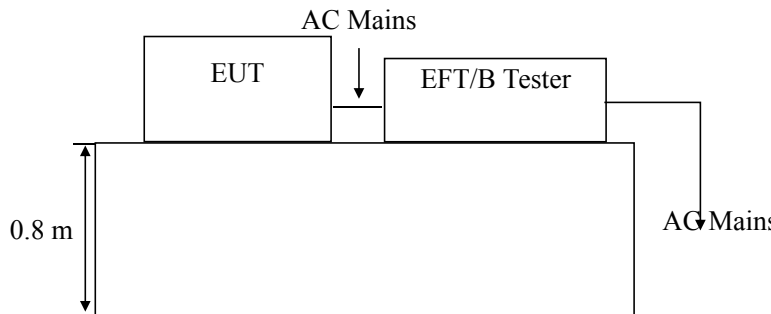
RF Field Strength Susceptibility Test Results

Ningbo KPL Technology Co.,Ltd.

<i>Applicant</i> : Yuyao Peipei Automotive Products Factory	<i>Test Date</i> : Oct.27,2023	
<i>EUT</i> : Portable inflation pump	<i>Temperature</i> : 22°C	
<i>M/N</i> : 006	<i>Humidity</i> : 50 %	
<i>Power Supply</i> : -	<i>Test Mode</i> : on	
<i>Frequency Range</i> : 80 MHz to 1000 MHz, 1.4GHz-2.7GHz		
<i>Modulation:</i> <input checked="" type="checkbox"/> <i>AM</i> <input type="checkbox"/> <i>Pulse</i> <input type="checkbox"/> <i>none</i> 1 KHz 80%		
<i>Criterion</i> : A		
	<i>Frequency Rang</i> : 80-1000MHZ, 1.4GHz-2.7GHz	
<i>Steps</i>	1%	1%
	<i>Horizontal</i>	<i>Vertical</i>
<i>Front</i>	<i>Pass</i>	<i>Pass</i>
<i>Right</i>	<i>Pass</i>	<i>Pass</i>
<i>Rear</i>	<i>Pass</i>	<i>Pass</i>
<i>Left</i>	<i>Pass</i>	<i>Pass</i>

11. ELECTRICAL FAST TRANSIENT/BURST TEST

11.1. EFT Test Setup



11.2. Test Standard

EN IEC 55014-2:2021 (EN 61000-4-4:2012)
Severity Level 2 at 1KV

11.3. Severity Levels and Performance Criterion

11.3.1. Severity level

Open Circuit Output Test Voltage $\pm 10\%$		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1.	0.5 KV	0.25 KV
2.	1 KV	0.5 KV
3.	2 KV	1 KV
4.	4 KV	2 KV
X	Special	Special

11.3.2. Performance criterion : B

11.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2..

11.5. Operating Condition of EUT

Setup the EUT as shown in Section 11.1.. The operating condition of EUT are listed in section 3.3.

11.6. Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between the EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

11.6.1. For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

11.6.2. For signal lines and control lines ports:

It's unnecessary to test.

11.6.3. For DC output line ports:

It's unnecessary to test.

11.7. Test Results

PASS.

Please refer to the following page.

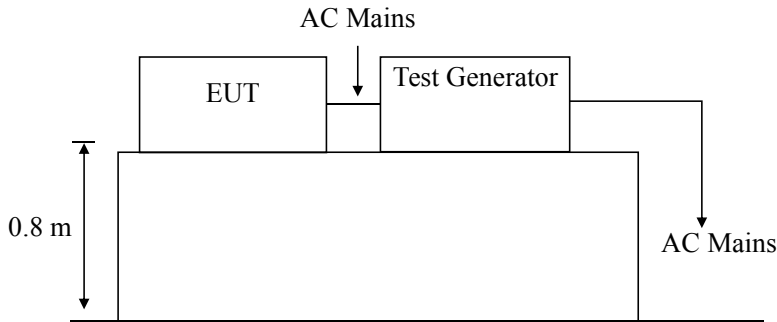
Electrical Fast Transient/Burst Test Results

Ningbo KPL Technology Co.,Ltd.

<i>Applicant</i> : Yuyao Peipei Automotive Products Factory					<i>Test Date</i> : Oct.27,2023				
<i>EUT</i> : Portable inflation pump					<i>Temperature</i> : 22°C				
<i>M/N</i> : 006					<i>Humidity</i> : 50%				
<i>Power Supply</i> : -					<i>Test Mode</i> : on				
<i>Test Engineer</i> :									
<i>Inject Place</i> : AC Mains									
<i>Inject Line</i>	<i>Voltage KV</i>	<i>Inject Time(s)</i>	<i>Inject Method</i>	<i>Results</i>	<i>Inject Line</i>	<i>Voltage KV</i>	<i>Inject Time(s)</i>	<i>Inject Method</i>	<i>Results</i>
<i>L</i>	<i>±1</i>	<i>120</i>	<i>Direct</i>	<i>Pass</i>					
<i>N</i>	<i>±1</i>	<i>120</i>	<i>Direct</i>	<i>Pass</i>					
<i>L N</i>	<i>±1</i>	<i>120</i>	<i>Direct</i>	<i>Pass</i>					

12.SURGE TEST

12.1.Surge Test Setup



12.2.Test Standard

EN IEC 55014-2:2021 (EN 61000-4-5:2014)
Severity Level 2 for Line to Neutral at 1.0KV

12.3.Severity Levels and Performance Criterion

12.3.1.Severity level

Severity Level	Open-Circuit Test Voltage KV
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

Performance criterion : **B**

12.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2..

12.5.Operating Condition of EUT

12.5.1.Setup the EUT as shown in Section 12.1..

12.5.2.Turn on the power of all equipments.

12.5.3.Let the EUT work in test mode (On) and test it.

12.6.Test Procedure

- 1) Set up the EUT and test generator as shown on Section 12.1
- 2) For line to line coupling mode, provide a 0.5KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.
- 3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
- 4) Different phase angles are done individually.
- 5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

12.7.Test Results

PASS.

Please refer to the following page.

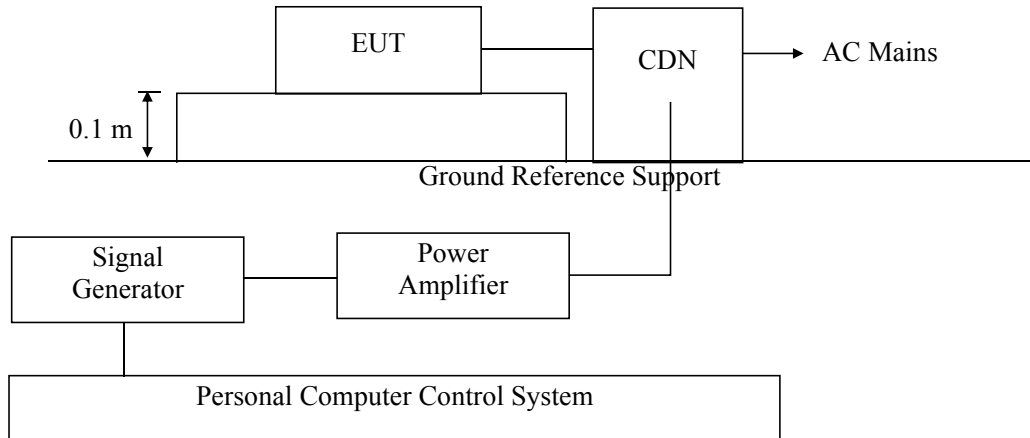
Surge Immunity Test Results

Ningbo KPL Technology Co.,Ltd.

<i>Applicant</i> : Yuyao Peipei Automotive Products Factory				<i>Test Date</i> : Oct.27,2023	
<i>EUT</i> : Portable inflation pump				<i>Temperature</i> : 22°C	
<i>M/N</i> : 006				<i>Humidity</i> : 50 %	
<i>Power Supply</i> : -				<i>Test Mode</i> : on	
<i>Test Engineer</i> :					
Location	Polarity	Phase Angle	No of Pulse	Pulse Voltage (KV)	Result
L-N	+	0	5	1.0	Pass
	+	90	5	1.0	Pass
	+	180	5	1.0	Pass
	+	270	5	1.0	Pass
	-	0	5	1.0	Pass
	-	90	5	1.0	Pass
	-	180	5	1.0	Pass
	-	270	5	1.0	Pass

13.INJECTED CURRENTS SUSCEPTIBILITY TEST

13.1.Block Diagram of Test AC Mains Setup



13.2.Test Standard

EN IEC 55014-2:2021 (EN 61000-4-6:2014)
Severity Level 2 at 3 V (rms), 0.15MHz ~ 80MHz

13.3.Severity Levels and Performance Criterion

13.3.1.Severity level

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

13.3.2.Performance criterion: A

13.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2..

13.5.Operating Condition of EUT

Setup the EUT as shown in Section 13.1.. The operating condition of EUT are listed in section 3.3.

13.6.Test Procedure

- 1) Set up the EUT, CDN and test generators as shown on Section 13.1.
- 2) Let the EUT work in test mode and test it.
- 3) The EUT are placed on an insulating support 0.8m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
- 4) The disturbance signal described below is injected to EUT through CDN.
- 5) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
- 6) The frequency range is swept from 150KHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.
- 7) The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
- 8) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

13.7.Test Results

PASS.

Please refer to the following page.

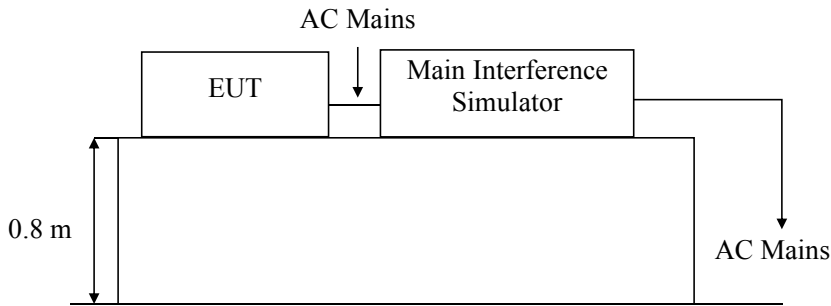
Injected Currents Susceptibility Test Results

Ningbo KPL Technology Co.,Ltd.

<i>Applicant</i> : Yuyao Peipei Automotive Products Factory			<i>Test Date</i> : Oct.27,2023	
<i>EUT</i> : Portable inflation pump			<i>Temperature</i> : 22°C	
<i>M/N</i> : 006			<i>Humidity</i> : 50 %	
<i>Power Supply</i> : -			<i>Test Mode</i> : on	
<i>Test Engineer</i> :				
<i>Frequency Range (MHz)</i>	<i>Injected Position</i>	<i>Strength</i>	<i>Criterion</i>	<i>Result</i>
0.15 ~ 20	AC Line	3V(rms), Unmodulated	A	Pass
20 ~ 80	AC Line	3V(rms), Unmodulated	A	Pass

14.VOLTAGE DIPS AND INTERRUPTIONS TEST

14.1.Voltage Dips and Interruptions Test Setup



Remark: Combination wave generator and decoupling network are included in test generator.

14.2.Test Standard

EN IEC 55014-2:2021 (EN 61000-4-11:2004)

14.3.Severity Levels and Performance Criterion

14.3.1.Severity level

Test Level %U _T	Voltage dip and short interruptions %U _T	Duration (in period)
0	100	0.5p
40	60	10p
70	30	25p

14.3.2.Performance criterion : C

14.4.EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

14.5.Operating Condition of EUT

14.5.1.Setup the EUT as shown in Section 14.1..

14.5.2.Turn on the power of all equipments.

14.5.3.Let the EUT work in test mode (On) and test it.

14.6.Test Procedure

- 1) Set up the EUT and test generator as shown on Section 14.1.
- 2) The interruptions is introduced at selected phase angles with specified duration.
- 3) Record any degradation of performance.

14.7.Test Result

PASS.

Please refer to the following page.

Voltage Dips And Interruptions Test Results

Ningbo KPL Technology Co.,Ltd.

<i>Applicant</i> : Yuyao Peipei Automotive Products Factory				<i>Test Date</i> : Oct.27,2023	
<i>EUT</i> : Portable inflation pump				<i>Temperature</i> : 22°C	
<i>M/N</i> : 006				<i>Humidity</i> : 50%	
<i>Power Supply</i> : -				<i>Test Mode</i> : on	
<i>Test Engineer</i> :					
<i>Test Level</i> % U_T	<i>Voltage Dips & Short Interruptions</i> % U_T	<i>Duration (in period)</i>	<i>Phase Angle</i>	<i>Criterion</i>	<i>Result</i>
0	100	0.5p	0° ~360°	C	Pass
40	60	10p	0° ~360°	C	Pass
70	30	25p	0° ~360°	C	Pass

APPENDIX I

APPENDIX II

APPENDIX III

Photo 1 General Appearance of the EUT



Photo 2 General Appearance of the EUT



Photo 3 General Appearance of the EUT



Photo 4 Test photos

