

Electronic and Electrical Products Service | 電子電氣產品



集团微信

集团官网：www.ntek.org.cn 客服热线：400 800 6106

本画册内的所有资料，包括图片，文字描述或其他资料，仅供参考或识别之用，所有内容一律以政府最终审批之法律文件与图则为准。

The final examination of all the information, the government legal documents and drawings shall prevail.

第1次印刷 2017年03月

NTEK[®] 北测集团

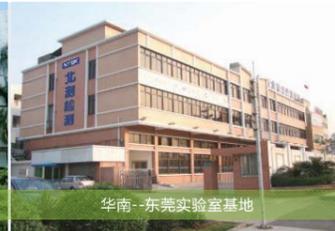
独立的第三方检验、测试、鉴定及认证服务机构，CNAS、CMA、CCC、CQC认可实验室
EMC、RF、Safety、Battery、Physical&Chemical、Environment、Energy Efficiency、PV



集团总部 (建设中)



华南-深圳实验室基地



华南-东莞实验室基地



华南-广州实验室基地



华东-昆山实验室基地



华东-福州实验室基地

Group Culture

集团文化

Vision 愿景

成为最受人信赖的检测验证机构
To be the most reliable testing and certification agency

Mission 使命

为客户提供最合适解决方案，用行动与责任成就生活之美
To provide the most suitable solution for our clients, to achieve beauty of life with action and obligation

Core values 核心价值观

客户第一、团队合作、拥抱变化、激情、诚信、敬业
Client first, teamwork, embrace change, passion, integrity, professionalism

Social responsibility 社会责任

“诚信检测”是NTEK北测可持续发展的经营战略，为客户提供科学、公正、准确、高效的服务。促进企业创造经济价值、服务民生、优化环境、缩短市场进入期，改善产品、流程、质量以及安全性能。同时树立品牌声誉，保护员工的社会福利。

"Integrity Testing" is a sustainable development business strategy of NTEK. We are committed to provide scientific, impartial, accurate and efficient services for our customers. Creating economic value, serving people's livelihood, improving the environment, shortening the market entry period, perfecting product quality and safety performance, optimizing the certification process, establishing a brand reputation, protecting the social welfare of employees at the same time.

NTEK Group (hereinafter referred to as NTEK), is not only a national high-tech enterprise but also an integrated public test platform for new materials and electronic products. As the pioneer in testing and verification services for Chinese companies, NTEK is one of the earliest professional third party laboratories that engaging in commodity products inspection, verification, testing and certification services.

For decades of development, NTEK sets up comprehensive testing laboratory areas in South China, East China, Central China, North China and Southwest China. NTEK has high-end labs such as EMC lab, RF lab, New energy lab (battery, car battery pile), electrical safety, energy efficiency, physical and chemical analysis lab (electronic and electrical substances, toys and baby supplies, textile, leather and shoes, accessories and bags and so on), food contact materials, environmental monitoring and occupational health and evaluation, metal and nonmetallic materials testing analysis, environmental reliability, failure analysis, vehicle and components (VOC test / ELV test), automotive electronic device, odor test, fogging test, reliability, functional testing and automotive electronic device EMC test and so on. NTEK can truly provide one-stop certification testing services of quality production chain for the customer.

NTEK Laboratories establish and manage strictly accordance with ISO/IEC 17025:2005 standard, are testing laboratories recognized by International Laboratory Accreditation Cooperation (ILAC approved) and have been accredited by the China National Accreditation Service for Conformity Assessment (CNAS L5516). In addition, NTEK laboratories obtained the import and export commodity inspection and accreditation body qualification certificate of the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China and also the China Quality Certification Center (CQC) entrust authorized test lab, CMA authorized test lab. NTEK fully equipped with the qualification to issue the third party test report.

As a comprehensive and professional international third party testing agency, NTEK has authorized by many international organizations, including the United States CPSC, UL, FCC, CEC, ETL, MET, TIMCO, German TUV, EMCC, PHOENIX, Britain ITS, Australian SAA, Canada CSA, IC, NEMKO, Hong Kong electric appliance science research institute, Korea Electric Appliance Science Research Institute (KTC) and so on, which could provide authoritative and professional test report.

NTEK is one of National Technical Committee of Auto Standardization (NTCAS), National Technical Committee on Environmental Standardization for Electrical and Electronic Products and System of Standardization Administration of China, Technical Innovation Alliance for inspection and verification of inferior, as well as Shenzhen Polymer Industry Association and Battery Industry Association, which is qualified to participate in drafting, and revising relevant standards. Meanwhile, as one of the initiators of smart wear industry standard and intellectual property alliance, NTEK could lead the standard compiling.

NTEK is devoted to establish a safe, environmentally friendly and healthy society and trying to become the most reliable body in the field of inspection, verification, testing and certification. Moreover, NTEK commits to consistently provide incomparable quality and safety services to worldwide customers on condition that we strictly follow the operating procedures and inspection testing standards, adhere to the objective independence, fairness principle and professional ethics, as well assume corresponding social responsibility.

北测集团（以下简称“NTEK”），作为国家级高新技术企业、新材料及电子产品综合公共测试平台，是中国第三方检测认证服务的开拓者，也是国内最早从事商品检验、鉴定、测试、认证等服务的专业机构之一。

NTEK经过十余年发展，在华南、华东、华中、华北、西南分别建有大型综合检测基地。具有行业顶尖的电磁兼容（EMC）、无线射频（RF）、新能源（各类电池、充电桩）、电气安全、能效节能、理化分析（电子电气禁限物质、玩具及婴童用品、服装纺织品、皮革鞋材、饰品箱包类）、食品及接触材料、环境检测、职业卫生与评价、金属及非金属材料检测分析、环境可靠性、失效分析、汽车及零部件的VOC、ELV、气味、雾化、可靠性、功能性测试，汽车电子EMC等实验室，为全球客户提供多元化、一站式检测认证服务。

NTEK实验室严格按照ISO/IEC17025：2005标准建立与实施管理，并通过中国合格评定国家认可委员会（CNAS：L5516）和国际实验室认可合作组织（ILAC）认可的实验室。获得国家质量监督检验检疫总局颁发的进出口商品检验鉴定机构资格证书，是国家强制性产品认证（CCC）指定实验室、中国质量认证中心（CQC）签约检测实验室、计量认证（CMA）实验室，完全具备出具第三方检测报告的资质。

NTEK获得美国CPSC、UL、FCC、CEC、ETL、MET、TIMCO、德国TUV、EMCC、PHOENIX、英国ITS、澳洲SAA、加拿大CSA、IC、挪威NEMKO、香港机电署、韩国电器科学研究院（KTC）等国际机构认可授权，检测报告具有权威公信力。

NTEK作为全国汽车标准化技术委员会（NTCAS）会员，全国电工电子产品与系统的环境标准化技术委员会会员，侵权伪劣物品检验鉴定技术创新联盟、深圳市高分子材料协会和电池行业协会会员，参与相关标准的起草、制/修订。NTEK作为智能穿戴产业标准与知识产权联盟的发起单位之一，主导智能穿戴产品的标准编写工作。

NTEK致力于建设安全、环保、健康的和谐社会，力图在检验、鉴定、测试及认证领域成为最受人信赖的机构。我们承诺会严格遵守作业程序、执行检验检测标准，坚持客观独立、公平公正的诚信原则、恪守职业道德、承担相应社会责任，始终如一地向全球客户提供无与伦比的质量和安服务。

About Us

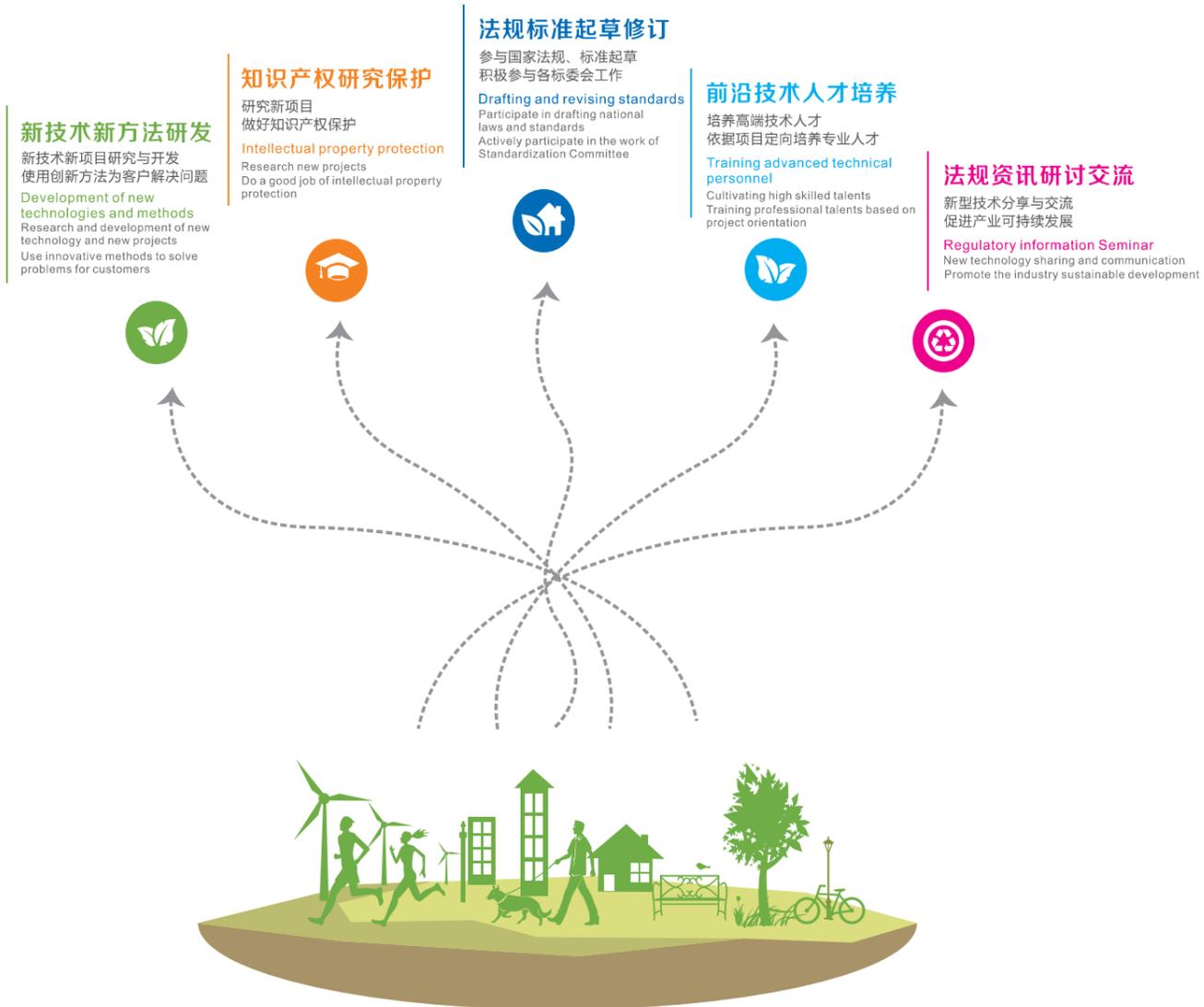
关于我们



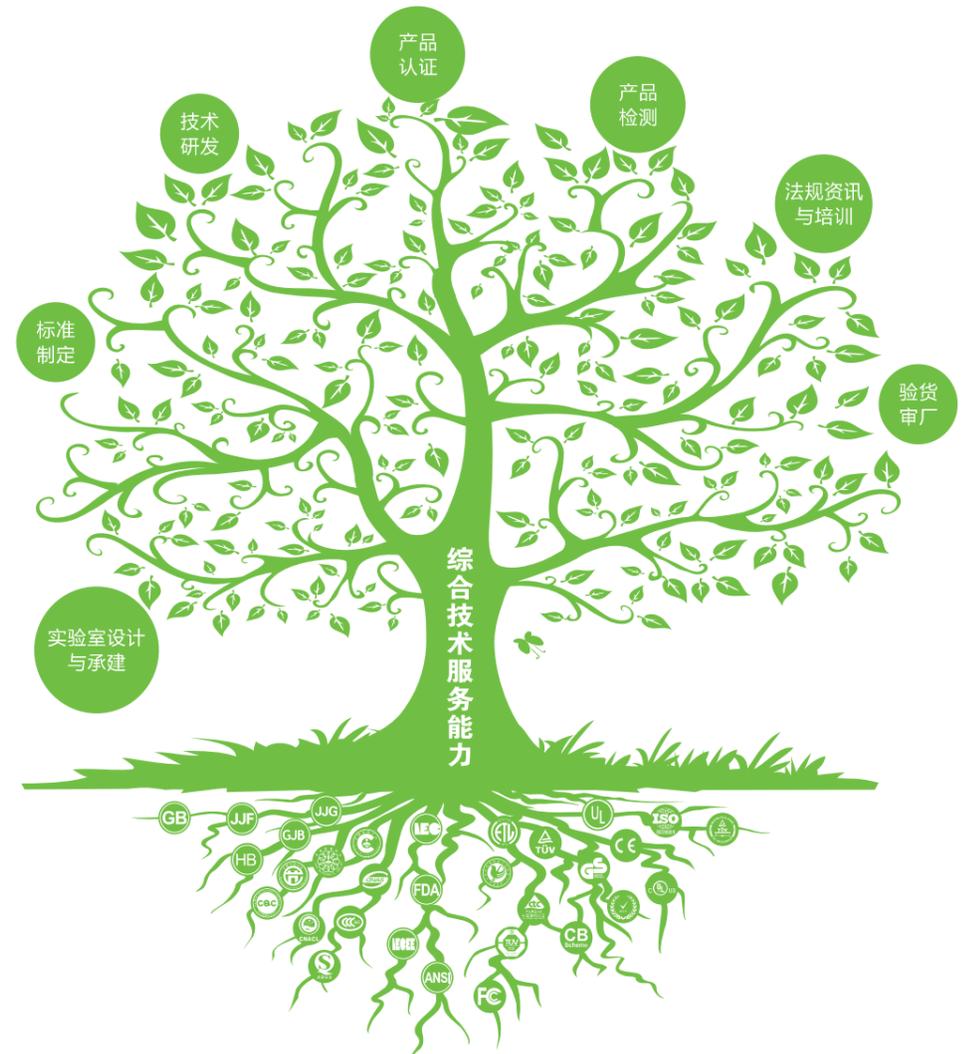
Qualification and authorization

资质荣誉与授权

 <p>CNAS 认可 中国合格评定国家认可委员会认可 By the China National Accreditation (CNAS) approval</p>	 <p>CMA 计量认证资质 Owens Qualification Certificate Of Meteorology Attestation</p>	 <p>CQC 委托检测实验室 中国质量认证中心 (电池民营第一家) China Quality Certification Center CQC entrusted testing lab (First Civilian-Run Enterprise For Battery)</p>	 <p>CCC 中国强制产品安全认证 (民营首批) China Compulsory Certification for safety product lines (The first private group)</p>
 <p>国家级高新技术企业 International High-Tech Enterprise</p>	 <p>RoHS 全国电子产品与系统的环境 标准化技术委员会会员 The National Electronic Product And System Environment Standardization Technical Committee Members</p>	 <p>NTCAS 全国汽车标准化委员会组员 China Auto Standardization Committee Members</p>	 <p>SZGOV 新型材料与电子产品综合公共 测试平台 (深圳市) Public Testing Platform Of New Materials And Electronics</p>
 <p>美国UL保险商授权实验室 The United States UL insurers authorized laboratory</p>	 <p>CPSC 美国消费品安全委员会 (CPSC) Consumer Product Safety Commission (CPSC)</p>	 <p>先进测试技术开发平台 北京大学深圳系统芯片设计重点实验室 Key Laboratory of Peking University Advanced testing technology development platform Shenzhen Processor-based SoC Platforms</p>	 <p>PAQCI 深圳市质量管理与检测促进会 理事单位 Shenzhen Quality Examination Management Promotion Council Members</p>
 <p>CAASA 北京侵权伪劣物品检验鉴定 技术创新联盟 Beijing Technical Innovation Alliance for inspection and identification of inferior and inferior commodities</p>	 <p>QS 深圳市电子商务产品质量安全 促进会 Shenzhen e-commerce product quality and Safety Promotion Association</p>	 <p>深圳市电池行业协会 Shenzhen Battery Industry Association</p>	 <p>深圳高分子行业协会 Shenzhen Polymer Industry Association</p>



NTEK research institute would build a green life together with you
北测研究院与您一起共建绿色生活



Content 目录

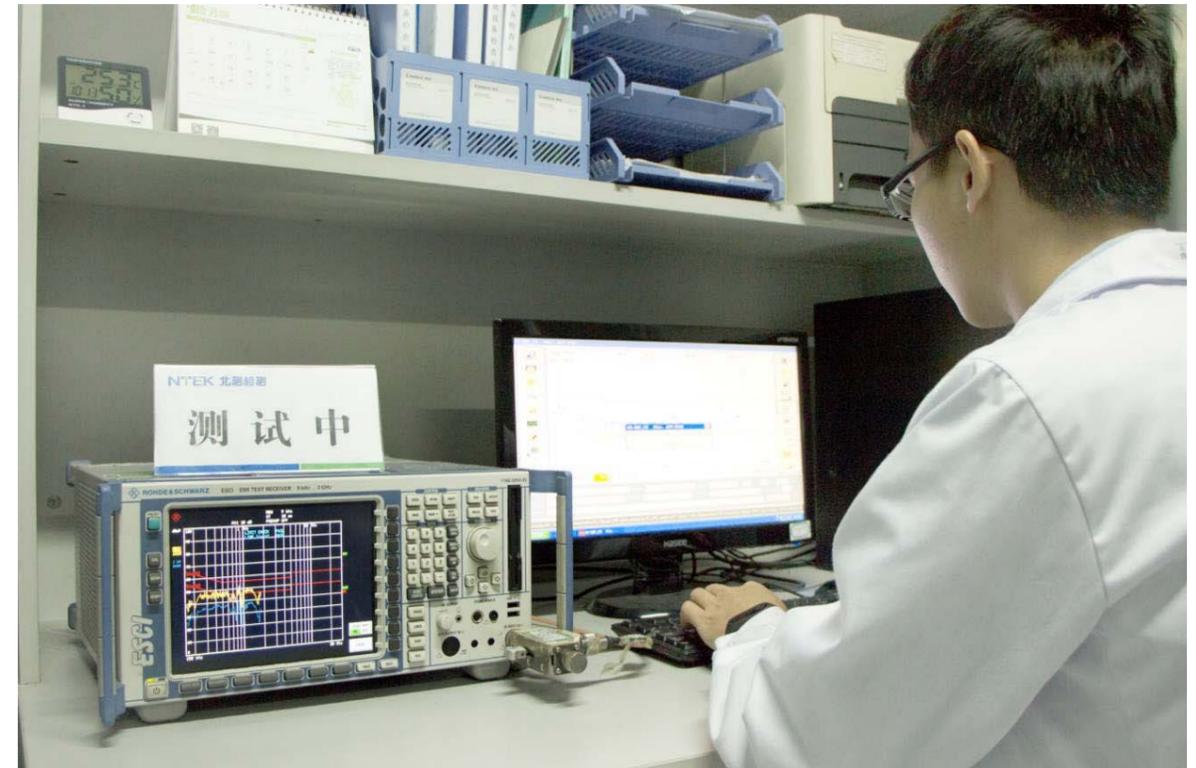
关于我们	03/04
荣誉资质/企业文化	05/08
电磁兼容实验室	09/12
无线射频实验室	13/16
电子电气安全实验室	17/20
新能源（电池）实验室	21/24
有害物质检测实验室	25/28
环境可靠性实验室	29/32
失效分析实验室	33/36
材料实验室	37/40
联系我们	43/44



EMC Lab 电磁兼容实验室

电磁兼容(EMC)是对电子产品在电磁场方面干扰大小(EMI)和抗干扰能力(EMS)的综合评定,是产品质量最重要的指标之一。电磁兼容的测量由测试场地和测试仪器组成。NTEK已在华东区、华南区均建立了一套独立完备的测试体系,共拥有四间标准3米法电波暗室、一间RF全波暗室、一套RS测试系统、三间抗干扰测试室、四间屏蔽室。测试仪器先进完善,均由德国 Rohde & Schwarz、TESEQ、Schwarzbeck、瑞士EMTEST、HAEFELY、EMC Partner、美国Agilent、FCC等行业内知名的国际公司制造和承建。技术团队资深高效,由一批多年从事EMC检测、对策、认证工作的专业人员和专家顾问组成,能为广大电子企业提供从PCB Layout设计,电路参数计算、元器件规格选择到整机系统集成、产品检测、对策、认证一站式服务。

Electromagnetic compatibility (EMC) is one of the most important indicators of the quality of a product, which is a comprehensive assessment of the electromagnetic interference (EMI) and the electromagnetic susceptibility(EMS) Electromagnetic compatibility measurement by the test site and test equipment. NTEK has been in the Southern China District of East China, has established a set of independent and complete testing system, has a total of four standard 3 meter anechoic chamber, a RF full Fully anechoic chamber, a set of RS test system, three EMS test room, four shielded room. Advanced testing equipment, by the German Rohde & Schwarz, TESEQ, Schwarzbeck, Switzerland EMTEST, HAEFELY, EMC Partner, Agilent, FCC and other well-known international companies in the manufacturing and construction industry. The senior high technical team, by a number of years engaged in EMC detection, countermeasures and certification of professional staff and expert consultants, to provide design from PCB Layout for the majority of electronic business, circuit parameter calculation and component specification to system integration, product testing, certification and Countermeasures of one-stop service.



服务范围 ■ Service Scope

- 电磁干扰 (EMI) 测试/对策/报告
EMC interference (EMI) test / countermeasure / Report
- 电磁敏感度 (EMS) 测试/对策/报告
EMC susceptibility test (EMS) / countermeasure / Report
- 产品认证服务, 获得各国EMC认证
Product certification services, access to national EMC certification
- 协助企业进行产品的EMC设计
Assist the enterprise to design EMC
- 协助企业进行EMC人员培训
Assist the enterprise to carry out EMC personnel training
- 各国EMC法规、标准咨询
National EMC regulations and standards
- 实验室场地出租
Laboratory rental

EMC测试项目 ■ EMC Test Items

- | | |
|----------|---------------------------------|
| ■ 传导 | Conduction emission |
| ■ 骚扰功率 | Disturbance Power |
| ■ 空间辐射 | Radiation emission(up to 18GHZ) |
| ■ 谐波&闪烁 | Harmonics& Flicker |
| ■ 磁场骚扰 | Magnetic Disturbance(x/y/z) |
| ■ 断续干扰 | Clicker |
| ■ 静电放电 | ESD |
| ■ 浪涌 | Surge |
| ■ 电快速脉冲群 | EFT/B |
| ■ 传导抗干扰 | CS |
| ■ 辐射抗干扰 | RS |
| ■ 电压跌落 | Dips |





基础产品标准 ■ Basic Product Standards

信息技术设备

CISPR 22, CISPR 32, EN 55032, AS/NZS CISPR 22, VCCI V-3, J55022, FCC PART 15, ICES-003, GB 9254
CISPR 24, EN 55024, CISPR 35, EN 55035, GB/T 17618

音视频/广播类产品

CISPR 13, CISPR 32, EN 55032, AS/NZS CISPR 13, J55013, GB 13837, CISPR 20, EN 55020, GB/T 9383

家用电器、电动工具和类似器具

CISPR 14-1, EN 55014-1, AS/NZS CISPR 14.1, J55014-1, GB 4343.1, CISPR 14-2, EN 55014-2, GB 4343.2

电气照明和类似设备

CISPR 15, EN 55015, AS/NZS CISPR 15, J55015, FCC PART 18, ICES-005, GB 17743, IEC/EN 61547, GB/T 18595

工业、医疗和科学产品

CISPR 11, EN 55011, AS/NZS CISPR 11, FCC PART 18, ICES-001, GB 4824

医用电气设备

IEC/EN 61326, GB/T 18268, IEC/EN 60601-1-2, IEC/EN 61326-1

居住、商业、轻工业环境下产品

IEC/EN 61000-6-3, GB/T 17799.3, AS/NZS CISPR 61000.6.3, IEC/EN 61000-6-1, GB/T 17799.1

工业环境下产品

IEC/EN 61000-6-4, GB/T 17799.4, AS/NZS CISPR 61000.6.4, IEC/EN 61000-6-2, GB/T 17799.2

测量、控制和实验室用的电气设备类

IEC/EN 61326-1, GB/T 18268.1

谐波电流&电压闪烁

IEC/EN 61000-3-2, GB 17625.1, IEC/EN 61000-3-3, GB 17625.2

不间断电源设备

(UPS)IEC/EN 62040-2, GB 7260.2

其它

EN 50130-4, EN 50121-3-2, EN 50412-2-1



认证项目 ■ Certification Items

欧洲：CE-EMC, E-Mark

北美洲和南美洲：FCC, ISED, IC

亚洲：VCCI, BSMI, CCC, CQC, MSIP, PSE, SIRIM, TISI, ISI

澳大利亚和非洲：RCM, SABS



基础标准 ■ Basic Standards

- IEC/EN 61000-4-2, GB/T17626.2 静电放电抗扰度试验
Electrostatic discharge immunity test
- IEC/EN 61000-4-3, GB/T17626.3 射频电磁场辐射抗扰度试验
Radio frequency electromagnetic field immunity test
- IEC/EN 61000-4-4, GB/T17626.4 电快速瞬变脉冲群抗扰度试验
Electrical fast transient burst immunity test
- IEC/EN 61000-4-5, GB/T17626.5 浪涌(冲击)抗扰度试验
Surge (impact) immunity test
- IEC/EN 61000-4-6, GB/T17626.6 射频场感应的传导骚扰抗扰度试验
Immunity to conducted disturbances induced by radio frequency field
- IEC/EN 61000-4-8, GB/T17626.8 工频磁场抗扰度试验
Power frequency magnetic field immunity test
- IEC/EN 61000-4-9, GB/T17626.9 脉冲磁场抗扰度试验
Pulse magnetic field immunity test
- IEC/EN 61000-4-11, GB/T17626.11 电压暂降、短时中断和电压变化抗扰度试验
Voltage dips, short interruptions and voltage variations immunity test
- IEC/EN 61000-4-12, GB/T17626.12 振荡波抗扰度试验
Oscillatory waves immunity test
- IEC/EN 61000-4-13, GB/T17626.13 谐波、谐波间波及电网信号的低频抗扰度试验
Low frequency immunity test of harmonic, harmonic and grid signal





RFLAB 无线射频实验室

我们积极了解行业资讯，以适应未来电子产品的发展趋势，满足国内外各电子企业的无线通讯产品认证的需求。NTEK拥有完整的无线自动化测试系统，我们有CNAS (CNAS Registration Number:L5516) 资质，并获得美国FCC (FCC Registration Number:238937)，加拿大工业部门 (IC Registration Number:9270A) 的授权。同时，我们还取得国内外多家认证机构的授权，比如：TIMCO (CE1177)，SEISMIC (CE2200)，EMCC (CE0678)，PHOENIX (CE0700)，TUV SUD, ACB (CE1588) 等。NTEK与日本、澳洲、韩国等多个区域的认证机构有密切的合作关系并积累了丰富的合作经验，可以有效的协助各大电子企业取得无线产品的各国认证和上市许可。

NTEK wireless communications department consists of a lot of experienced wireless communications technology engineers. In order to adapt to the future development trend of electronic products, and to meet the domestic and international electronic business wireless communications product certification needs, We have a positive understanding of the industry. NTEK has a complete RF automation test system. We have the qualification of CNAS (CNAS Registration Number:L5516), and obtained authorization of FCC(FCC Registration Number:238937), industry Canada(IC Registration Number:9270A). Similarly, we also achieved a number of authorization of certification bodies. Like: TIMCO(CE1177)、SIEMIC (CE2200) of USA、EMCC (CE0678)、PHOENIX (CE0700)、TUV SUD、ACB、NTEK has a wealth of experience and close relationships with certification bodies in Japan, Australia, Korea and many other regions. This will effectively make the major electronics companies wireless products available to the market.

服务范围 ■ Service Scope

- 产品验证服务，取得各国认证机构认可
 - 无线收发装置的各国管制规定测试 / 报告发行及申请服务
 - 国内低功率射频电机管制之测试 / 对策服务 / 报告发行及申请服务
 - 通讯产品测试 / 报告发行及申请服务
 - 各国法规及无线 / 手机 / 通讯技术资料咨询服务
 - 国内外无线射频测试 / 对策服务 / 报告发行 / 申请服务
 - 手机EMC测试/WiMAX EMC 测试/CTIA TRP/TIS 测试
 - MIMO 测试/DFS Master/Slave测试/SAR测试
 - 手机射频一致性测试，验证服务。
-
- Product certification services, access to national certification bodies recognized
 - Test and report issuance and application services for wireless transceivers
 - Domestic low power RF motor control test / countermeasure service / report distribution and Application
 - Communication product testing / reporting and application services
 - National regulations and wireless / mobile / communications technical information consulting services
 - Domestic and international radio frequency test / countermeasure service / report release / application service
 - Mobile phone EMC test/WiMAX EMC test/ CTIA TRP/TIS test
 - MIMO test/DFS Master/Slave/SAR test
 - Mobile phone rf conformance testing, validation service.

产品范围 ■ Product Range

无线类产品:

无线收发器、保全装置、无线对讲机、无线麦克风、遥控器无线网络装置、影像传送系统、蓝牙、无线键盘/鼠标及其他低功率无线收发机，无人机，RFID产品、物联网产品。

无线通讯类产品:

2G手机、3G手机、LTE手机、U&V段专业民用对讲机、DECT手机(1.8G,1.9G频段)。

通讯类产品:

电话机、有线电话无线主副机、传真机、电话答录机、数据机、数据介面卡及其他通讯产品。

Wireless products:

Wireless transceiver, security devices, wireless walkie-talkie, wireless microphone, wireless remote control network devices, image transmission system, bluetooth, wireless keyboard/mouse and other low power Wireless transceiver, unmanned aerial vehicles (uavs), RFID products. The Internet of things.

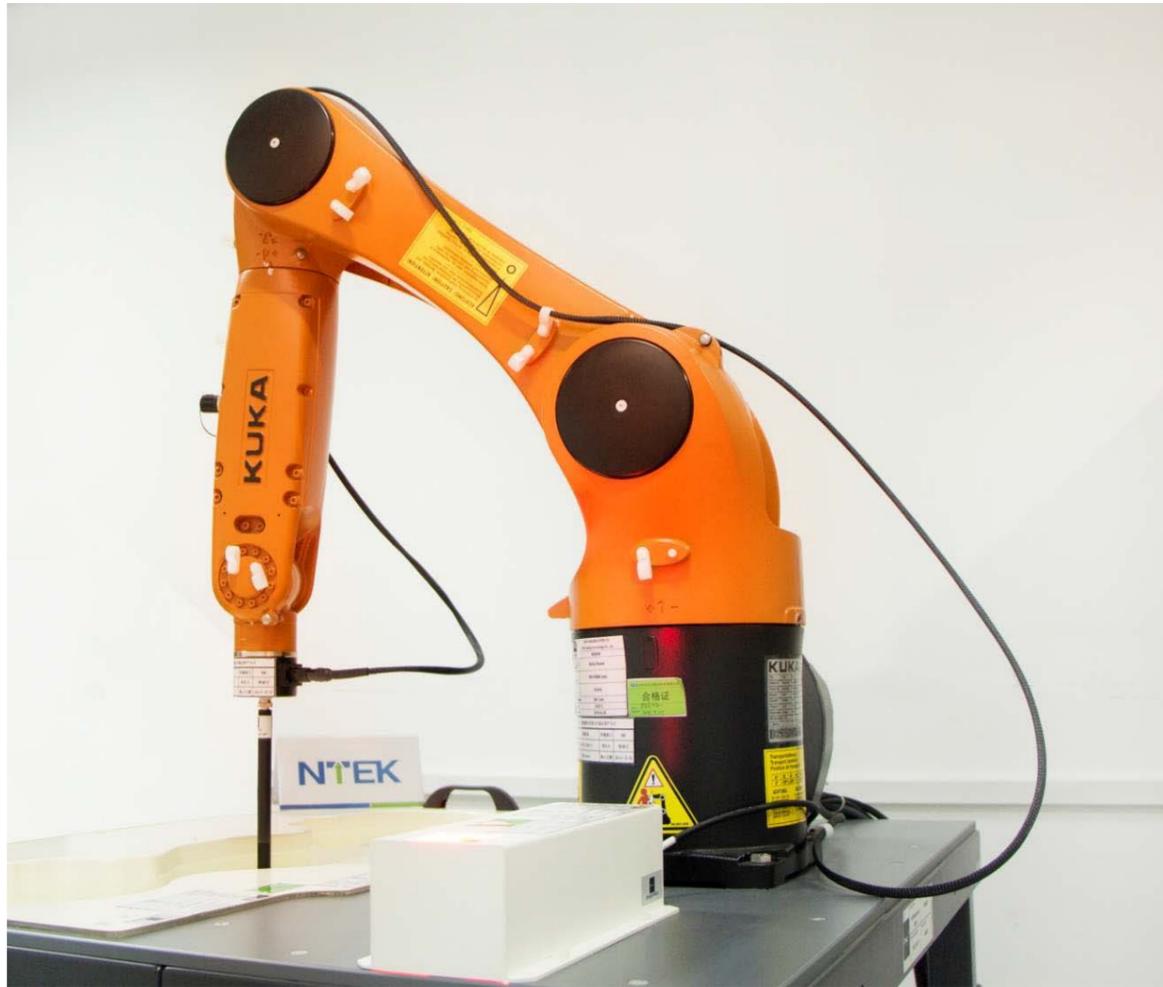
Wireless communications products:

2 G mobile phones, 3 G, LTE mobile phones, U&V period of professional civilian interphone, DECT (1.8 G and 1.9 G band).

Communications products:

Wireless telephone, cable phone main machine, fax machines, machine, machine, data interface card and other communications products.





认证项目 ■ Certification Items

- | | | | | |
|--------------|-------------|-------------|------------|------------|
| ■ 美国FCC ID | ■ 加拿大 IC ID | ■ 新加坡IDA | ■ 印度WPC | ■ 印尼SDPPI |
| ■ 日本MIC&JATE | ■ 台湾 NCC | ■ 墨西哥IFETEL | ■ 巴西ANATEL | ■ 以色列MOC |
| ■ 欧盟CE NB | ■ 韩国 MSIP | ■ 沙特阿拉伯CITC | ■ 阿联酋TRA | ■ 智利SUBTEL |
| ■ 香港 OFCA | ■ 澳洲 RCM | ■ 秘鲁MTC | ■ 中国SRRC | ■ 越南MIC |
| ■ 泰国NBTC | ■ 马来西亚SIRIM | ■ 各国通讯法规 | | |

电磁波吸收率(SAR测试) ■ SAR Test

- 技术标准和测试标准：IEEE 1528, IEC/EN 62209-1, IEC/EN 62209-2, OET65C, KDB865664 D01
- 通用标准：EN50360, EN50566, KDB447498 D01, KDB865664 D02, RSS-102
- 限值标准：COUNCIL RECOMMENDATION(1999/519/EC), FCC 47 CFR Part 2(2.1093), RSS-102

常见测试项目 ■ General Test Items

- | | |
|-------------------------|---------------------------------------------|
| ■ 频率误差 | Frequency error |
| ■ 辐射杂散(<1GHz) | Radiated spurious emission(<1GHz) |
| ■ 功率频谱密度 | Power spectral density |
| ■ 瞬态功率 | Transient power |
| ■ 功率平坦度 | Power flatness |
| ■ 邻道信号选择性 | Adjacent channel selectivity |
| ■ 辐射载波功率 | Radiated power |
| ■ 辐射杂散(>1GHz, <26.5GHz) | Radiated spurious emission(>1GHz, <26.5GHz) |
| ■ 占空比 | Duty cycle |
| ■ 邻频功率 | Adjacent frequency power |
| ■ 互调衰减 | Intermodulation attenuation |
| ■ 散信号抑制 | Scattered signal suppression |
| ■ 传导载波功率 | Conducted carrier power |
| ■ 传导杂散 | Conducted Spurious Emission |
| ■ 相位误差 | Phase error |
| ■ 调制带宽 | Modulation bandwidth |
| ■ 频率响应 | Frequency response |
| ■ 互调抗扰性 | Intermodulation Rejection |
| ■ 自适应性 | Adaptivity |
| ■ 接收阻塞 | Receive blocking |
| ■ 动态频率选择 | Dynamic frequency selection |



无线产品测试标准 ■ Wireless Product Standards

- 2.4G通讯类产品标准：
EN300328, FCC Part 15.247, FCC Part 15.249, EN300440, RSS 247, KN300328, AS/NZS 4268, MIC.NO 88, Annex 44
- 5G类产品标准：
EN301893, FCC Part 15.407, EN300440, RSS 247, AS/NZS 4268, MIC.NO 88, Annex 45.
- 各种短距离无线产品：
EN300220, EN300330, FCC Part 15.231, RSS 210, AS/NZS 4268, GSM 通讯类：
EN301511, FCC Part 22H, FCC Part 24E, RSS-132, RSS-133.
- WCDMA通讯类：
EN301908, FCC Part 22H, FCC Part 24E, RSS-132, RSS-133.
- LTE通讯类：
EN301908, FCC Part 22H, FCC Part 24E, FCC Part 27, RSS-132, RSS-133.
- 无线音频类产品：
EN300422, FCC Part 90, FCC Part 74, FCC Part 15.239, EN301357, EN300086.
- 无线充电器：
EN300330, FCC Part 18/Part 15





Safety Lab for Electronic & Electrical Product 电子电气安全实验室

NTEK安规实验室拥有先进、完善的测试设备和经验丰富的技术人员，严格按ISO 17025运行，取得了CNAS, CMA等资质，并与国内外权威认证机构如UL, TUV, ITS, CQC等建立了良好的合作关系。我们致力于协助企业申请并快速获得全球安全认证（CCC, CB, CE, UL, ETL, TUV, GS, RCM, PSE, KC, CSA, SONCAP, SABS, SASO等），全球能效认证（ErP, CEC, DOE, Energy Star, NRCAN, GEMS等）以及FDA认证等。

NTEK不仅能够提供有竞争力的一站式全球认证，也能公正、科学、准确、高效地完成确认检验和委托试验。我们还能协助客户培训安规专业技术人员，识别并解决产品从研发到中试，再到量产、售后等全生命周期的安规和节能问题。我们在确保符合法律法规的前提之下，致力于与客户一起，创造性地提供最具竞争力的解决方案，为企业快速设计、生产出安全、节能的优质产品服务，为贵公司产品顺利销往全球市场保驾护航。

NTEK safety laboratory has advanced and perfect testing equipment and experienced technical personnel, runs strictly as per the ISO 17025 standard, achieved CNAS, CMA and other qualifications, and with domestic and international authoritative certification bodies such as UL, TUV, ITS, CQC and other established good relations of cooperation. We are committed to assist the enterprise to apply and achieve global safety certification quickly (CCC, CB, CE, UL, ETL, TUV, GS, RCM, PSE, KC, CSA, SONCAP, SABS, SASO, etc.), the global energy efficiency certification (ErP, CEC, DOE, Energy Star, NRCan, GEMS, etc.) and FDA registration and so on.

NTEK can not only provide competitive one-stop solutions for electrical and electronic products to access target markets, but also adhere to the guideline of impartial, science, precise, efficiency to finish confirmatory test and entrusted test. NTEK also provides customized training services, helping clients to train professional and technical safety personnel, to identify and resolve safety and energy saving problem during the whole product life period from development stage, pilot stage, mass production to after-sales service. NTEK committed to work with clients creatively, provides the most competitive solutions to help them to design and produce a safe, energy-saving high-quality products rapidly, while ensuring compliance with laws and regulations. All is for ensuring your products to sell around the world smoothly.

服务范围 ■ Service Scope

协助客户在产品阶段消除安全隐患，如电路的电气间隙、爬电距离、安全隔离与防护等，评估结构设计的安全风险，进行预测试或结构检查，以降低改版、改模的频率，缩短研发和获证的周期，降低重测的概率，控制研发费用。

协助客户与认证机构沟通、指导客户准备各项申请文件，可节省申请时间、减少客户在认证申请过程中的麻烦。

协助客户处理工厂审查出现的问题，并辅导客户工厂审查的相关事项。

协助企业进行安规、能效人员培训/各国安规、能效之法规、标准咨询/实验室场地出租。

To control costs of development, reduce the risks of re-testing, shorten the period from development to getting the certificates, reduce the times of changing design or mold, we can assist customers to reduce safety risks early in development stage through evaluating construction design, assessing schematic and PWB layout, verify clearance and creepage distances, checking safety isolation, doing pre-tests etc.

Communicate with certification body as customer's representative, help to prepare the related documents, save customer's time and energy.

Assist customer to deal with problems which may occur in factory inspection and provide relevant training services about field inspection, improve the ability of the technicians or engineers for safety and energy efficiency.

Consultancy of international safety standard and regulations / Laboratory for rent.



认证项目 ■ Certification Items

欧洲	CE-LVD, GS, TUV-mark, NEMKO, SEMKO, DEMKO, ENEC, BEAB, ErP, COC
亚洲	CCC, CQC, KC, PSE, BSMI, PSB, SASO, MEPS, E-Standby
北美洲和南美洲	cULus, cETLus, cTUVus, cCSAus, NOM, IRAM, DOE, CEC, Energy Star, NRCan, FDA
澳大利亚和非洲	RCM, SAA, GEMS, SONCAP, SABS
全球认证	CB



检测范围 ■ Test Scope

信息技术设备	IEC/EN/UL 60950-1, CSA C22.2, No. 60950-1, AS/NZS 60950-1, J 60950-1, K 60950-1, GB 4943.1, IEC/EN/UL 62368-1
音视频设备	IEC/EN/UL 60065, CSA C22.2 No. 60065, AS/NZS 60065, J 60065, K 60065, GB 8898, IEC/EN/UL 62368-1
电源类	IEC/EN/UL 60950-1, IEC/EN/UL 60065, IEC/EN 60335-2-29, IEC/EN 61558-1/-2, AS/NZS 61558.1/.2.X, IEC/EN 61010-1, IEC/EN/UL 60601, UL 1310, UL 1012, UL 697, GB 19510, GB 8898, GB 4943.1.
不间断电源(UPS)	IEC/EN 62040-1, AS 62040.1.1, UL 1778
2类和3类变压器	UL 5085-1/-2/-3, UL 1585
电池包/移动电源类	IEC/EN/UL 60950-1.
灯具	IEC/EN 60598-1/-2-X, AS/NZS 60598.1/.2.X, J60598-1/-2-X, K60598-1/-2-X, GB7000.1/.X
固定式灯具	UL 1598, IEC/EN 60598-2-1, GB 7000.201
嵌入式灯具	UL 1598, IEC/EN 60598-2-2, GB 7000.202
便携式灯具	UL 153, IEC/EN 60598-2-4, GB 7000.204
隧道灯/路灯	UL 1598, IEC/EN 60598-2-3, GB 7000.5
应急照明灯具	UL 924, IEC/EN 60598-2-22, GB 7000.2
投光灯具	UL 1598, IEC/EN 60598-2-5, GB 7000.7
轨道灯	UL 1574, UL 1598, IEC/EN 60598-2-1, GB 7000.201
普通照明自镇流灯(节能灯、射灯、LED球泡灯)	UL 1993, IEC/EN 60968, AS/NZS 60968, IEC/EN 62031, IEC/EN 62560, IEC/EN 62471
LED 灯管	UL 8750, UL 1993, UL 1598C, IEC 60061, IEC 62471, IEC 62031, IEC 61347-2-13, IEC 61195, IEC 61199, IEC/EN 62776
灯的控制装置电子镇流器	IEC/EN 61347-1/-2-X, AS/NZS 61347.1/.2.X, UL 8750, UL 935, GB 19510.X
LED模块用交流或直流电子控制装置	IEC/EN 61347-2-13, GB 19510.14
荧光灯用交流电子镇流器	IEC/EN 61347-2-3, GB 19510.4
荧光灯镇流器	IEC/EN 61347-2-8, GB 19510.9
放电灯(荧光灯除外)镇流器	IEC/EN 61347-2-9, GB 19510.10
灯具及灯具系统光生物学安全	IEC/EN 62471, IEC/TR 62778
灯具EMF	IEC/EN 62493
家用电器	IEC/EN 60335-1/-2-X, AS/NZS 60335.1/.2.X, J60335-1/2-X, K60335-1/-2-X, GB 4706.1/.X
马达类食物处理器(搅拌机/榨汁机/碎肉机/切片机)	UL 982, IEC/EN 60335-2-14, GB 4706.30
液体加热器具(咖啡壶/电水壶)	UL 1082, IEC/EN 60335-2-15, GB 4706.19
皮肤或毛发护理电器(风筒/卷发器/直发器等)	UL 859, IEC/EN 60335-2-23, GB 4706.15
电热毯、电热垫和类似柔性加热电器	UL 130, IEC/EN 60335-2-17, GB 4706.8
紫外和红外辐射皮肤护理电器	IEC/EN 60335-2-27
电池充电器	UL 1310, UL 1012, IEC/EN 60335-2-29, GB 4706.18
房间电热取暖器	UL 1278, IEC/EN 60335-2-30, GB 4706.23
抽油烟机	UL 507, IEC/EN 60335-2-31, GB 4706.28
电磁灶	IEC/EN 60335-2-9, GB 4706.29
按摩器	UL 1647, IEC/EN 60335-2-32, GB 4706.10
马达	UL 2111/UL 1004, IEC/EN 60335-2-34
房间空气调节器/除湿机	UL 484, IEC/EN 60335-2-40, GB 4706.32
商用电烤架和面包片烘烤器	IEC/EN 60335-2-48
空气清新机/负离子发生器	UL 867, IEC/EN 60335-2-65, GB 4706.45
冷热饮水机	IEC/EN 60335-2-15, GB 4706.42
加湿器	UL 998, IEC/EN 60335-2-98
电熨斗	UL 1005, IEC/EN 60335-2-3, GB 4706.2
洗碗机	UL 749, IEC/EN 60335-2-5, GB 4706.25
剃须刀, 头发剪和类似装置烤架, 烤箱, 多士炉和类似便携式烹调器具	UL 1028, IEC/EN 60335-2-8
油炸锅, 电煎锅	UL 1026, IEC/EN 60335-2-9, GB 4706.14
风扇	UL 1083, IEC/EN 60335-2-13, GB 4706.56
风扇	UL 507, IEC/EN 60335-2-80, GB 4706.27
家电EMF	EN 62233
机械标准	ISO12100, EN 62040-1

安全测试项目 ■ Safety Test Items

■ 输入测试	Input test	■ 电气强度测试	Electric strength test
■ 标签耐久性测试	Label durability test	■ 故障测试	Abnormal operating test
■ 电容放电测试	Discharge of capacitors	■ 单次失效测试	Single fault test
■ 安全特低电压电路(SELV)测试	Safety extra low voltage circuit (SELV) test	■ 灼热丝测试	Glow-wire test
■ 限电流电路(LCC)测试	Limited current circuit (LCC) test	■ 针焰测试	Needle flame test
■ 限功率源(LPS)测试	Limited power source (LPS) test	■ 水平垂直燃烧测试	Horizontal and vertical burning test
■ 接地连续性测试	Grounding continuity test	■ 球压测试	Ball pressure test
■ 潮态测试	Humidity Conditioning	■ 维卡软化温度点测试	Vicat softening temperature test
■ 工作电压测试	Working voltage test	■ 绝缘阻抗测试	Insulation resistance test
■ 危险电压测试	Hazardous voltage test	■ 10kV浪涌电压测试	10kV surge test
■ 电源线拉力测试	Strain Relief Test	■ 声压测试	Sound pressure test
■ 螺丝扭力测试	Screw torque test	■ 防尘防水(IP等级)测试	Dustproof and waterproof (IP grade) test
■ 稳定性测试	Stability test	■ 反灌保护测试	Backfeed protection test
■ 推拉力测试	Steady force test	■ 电池过充过放测试	Battery overcharging & excessive discharging test
■ 钢球冲击测试	Ball impact test	■ 电源线摇摆测试	Power cord swing test
■ 冲击锤冲击测试	Impact hammer test	■ 盐雾测试	Salt spray test
■ 跌落测试	Drop Test	■ 漏电起痕指数测试	Comparative tracking index (CTI) test
■ 应力消除测试	Stress relief test	■ 运动部件防护测试	Protection against moving part test
■ 吊重测试	Wall or ceiling mounted equipment	■ 可触及部件测试	Accessibility test
■ 直插设备力矩测试	Torque test	■ 空载功率测试	No-load power test
■ 插头形状和尺寸测试	Plug shape and dimension test	■ 效率测试	Efficiency test
■ 滚筒跌落测试	Tumbling barrel test	■ 亮度测试	Luminance test
■ 温升测试	Temperature rise test	■ 光源光电色测试	Spectroradiometric & electric analysis for light source
■ 接触电流试验	Touch current test	■ 光分布测试	Distributed photometric characteristics
■ 结构检查	Construction inspection		

能效测试标准 ■ Energy Efficiency Test Standards

灯具: LM-79, LM-80, CEC-400-2017-002, Eligibility Criteria-Version 2.0, EC 859, EC 244, EU 1194
 电源: EC 278, COC V2, CEC-400-2017-002, Appendix Z to Subpart B of 10CFR 430, AS/NZS 4665, GB 20943
 电池充电系统: CEC-400-2017-002, Appendix Y to Subpart B of Part 430
 家电: EC 643 (Refrigerators), EC 1275 + EU 801
 办公室设备: EC 1275 + EC 801
 音视频类: Energy Star (Television, Display), EC 642 + EU 801, EC 1062, IEC/EN/AS/NZS 62087 (Set Top Boxes, Television),

中国能效标识 ■ Chinese Energy Label

- 自镇流荧光灯 GB 19044
- 高压钠灯 GB 19573
- 家用电磁灶 GB 21456
- 平板电视机 GB 24850
- 显示器 GB 21520
- 数字电视接收器 GB 25957
- 电饭锅 GB 12021.6
- 电风扇 GB 12021.9
- 电动洗衣机 GB 12021.4
- 储水式电热水器 GB 21519
- 复印机 GB 21521





NEW ENERGY Lab

新能源（电池）实验室

NTEK新能源（电池）实验室专注于研究各国电池标准的变化，并和国际知名机构保持良好的合作关系，专属团队为新能源产业相关制造商，分销商及进口商提供高度灵活的一站式测试和认证服务解决方案，以配合客户轻松便捷的获得进入多国市场的通行证。目前新能源实验室配备了领先的检测设备和仪器，根据欧盟北美等主要国家与地区的相关标准对各类新能源产品提供检测认证服务，以保证新能源产品符合安全、性能、储存、运输、化学及电磁兼容等各项要求，是新能源产业的可靠合作伙伴。选择我们的优势：第三方机构认证标志提升竞争力，减少产品本身带来的风险，进入市场的快捷通道，降低海关延误，企业社会责任形象的提升。

NTEK New Energy Laboratory (Battery Laboratory) highly focuses on researching the changes or updates of international standards, and also keep a great cooperation with international well-known certification bodies. The professional new energy focus group provides one-stop testing and certification services for manufacturers, distributors, and importers related to the new energy industry in order to help customers' products successfully enter into different countries. The New Energy Laboratory has already equipped with advanced test facilities or instruments, we provide testing and certification services for the new energy products according to North American standards and European standards in order to ensure that the new energy products are in compliance with requirements of safety, performance, storage, transport, chemistry and EMC, the new energy laboratory must be a completely reliable partner with new energy industry. What our advantages would be the promotion of competitiveness by the third-party certification marks, the reduction of risks from the products, the rapid way to enter into the international marketplace, the reduction of delay at customs, and the promotion of reputation of social responsibility of enterprise.

服务范围 ■ Service Scope

CELLS AND BATTERIES USED IN PORTABLE Electronic Equipment / 便携式电子产品用电池和电池组

产品	国家	认证项目	测试标准
锂电池	全球	UN38.3	ST/SG/AC.10/11/Rev.5-Section38-AmenbdIATA DGR
电池	全球	SDS	OSHA GHS 新版
便携式二次电芯	CB成员国	CB/IEC Report	IEC62133 IEC60950
锂电池	欧盟	EN Report	EN62133 EN60950
锂电池芯	北美	UL/cTUVus/CSA	UL 1642/UL E62133/CSA E62133
家用及商用电池	北美	UL/cTUVus/CSA	UL 2054/UL E62133/CSA E62133
移动电源	北美	UL/cTUVus/CSA	UL 2056
便携式二次锂电池与电芯	韩国	KC	KC 62133
锂电池	日本	PSE	日本电气用品安全法J62133(H28)
锂电芯与电池	泰国	TISI	TIS 2217-2548(2005)
蜂窝电话用锂电池	巴西	ANATEL	Resolution#481
电池	欧盟	CE	EN 55032,EN 55024 or EN61000-6-1,EN61000-6-3
电池	美国	FCC	Part 15B
便携式二次电池与电芯	台湾	BSMI	CNS 15364
电池/便携式移动电源	印度	BIS	IS16046
便携式二电芯与电池	中国	CQC or Report	GB31241-2014
便携式笔记本可充电电池	美国	CTIA	IEEE 1625
手机可充电锂电池	美国	CTIA	IEEE 1725
锂电芯/电池	墨西哥	NOM	NOM-001-SCFI-1993

BATTERY Test Items / 电池测试项目

环境测试 Environmental Test

高度模拟（低气压） Low pressure
温度循环 Temperature cycling
热滥用 Thermal abuse

火焰暴露试验 Fire Exposure Test

燃烧抛射体测试 Projectile

设计评估 Design evaluation

强制内部短路测试 Forced internal short circuit

机械测试 Mechanical Test

包装跌落测试 Packages drop test

防爆测试 Atmosphere Explosives Test

静电放电测试 Electrostatic discharge

电磁兼容测试 EMC Test

电池电化学分析 Electrochemical analysis

电池材料特性分析 Battery materials analysis

机械测试 Mechanical Test

振动 Vibration
机械冲击 Mechanical shock
自由跌落 Free fall
挤压 Crush
重物冲击 Impact

电气测试 Electric Test

额定容量 Rated capacity
过度放电 Over discharge
强制放电 Forced discharge
外部短路 External short circuit
内阻 Internal resistance
放电性能 Discharge performance
过度充电 Over charge
高倍率充电 High-rate charging
耐久寿命 Endurance
荷电保持和恢复 Charge retention and recovery





ELECTRICAL ENERGY STORAGE SYSTEMS

Test and Certification / 电气储能系统测试和认证

■ 电池产品的使用范围 Usable range of battery product

轨道和海事应用 Rail and marine applications	两轮车辆 2-wheel vehicles
电网储能 Grid storage	电网平衡 Grid balancing
备用电源 Backup applications	不间断电源(UPS) Uninterruptable power supplies
固定储能系统 Stationary energy storage systems	航空储能装置 Aerospace energy storage device

■ 电池测试标准/Battery Test Standards

IEC/EN62133	DOE/ID-11069
UL1973	DOE/ID-11173
IEC62619	SAE J2464
IEC62620	SAND 2005-3123
UN38.3	ISO12405-1/2

■ 服务范围 Service Items

TUV Mark 标志 TUV Mark
 CB测试报告 CB report
 委托测试报告 Test report
 客户委托测试 Client requirement test



POWER BATTERY AND ELECTRIC CAR CHARGING PILE SYSTEM

Test and Certification / 动力电池及电动汽车充电桩系统测试与认证

■ 电池产品的使用范围 Usable range of battery product

电动自行车 Electric bike	电动助力车 Electric pedelec assistant cycle
电动摩托车 Electric motorcycle	电动滑板车 Electric scooter
电动三轮车 Electric three-wheel	电动轮椅 Electric wheelchair
电动高尔夫球车 Electric golf cart	电动沙滩车 Electric territory vehicle
电动观光车 Electric coach	摄位车 Segway
电动汽车 Electric Vehicles	充电桩系统 Car charging pile system

■ 电池测试标准/Battery Test Standards

IEC/EN62133	SAE J2464
IEC62660-1/2	UL 2580
UN38.3	EN61851-1/22
GB/T 31484	NB/T 33002
GB/T 31485	Q/CSG 11516.1
GB/T 31486	Q/GDW 485

■ 服务范围 Service Items

TUV Mark 标志 TUV Mark
 CB测试报告 CB report
 委托测试报告 Test report
 客户委托测试 Client requirement test



SOLAR PHOTOVOLTAIC SYSTEMS

Test and Certification / 太阳能光伏系统测试和认证

■ 电池产品的使用范围 Usable range of battery product

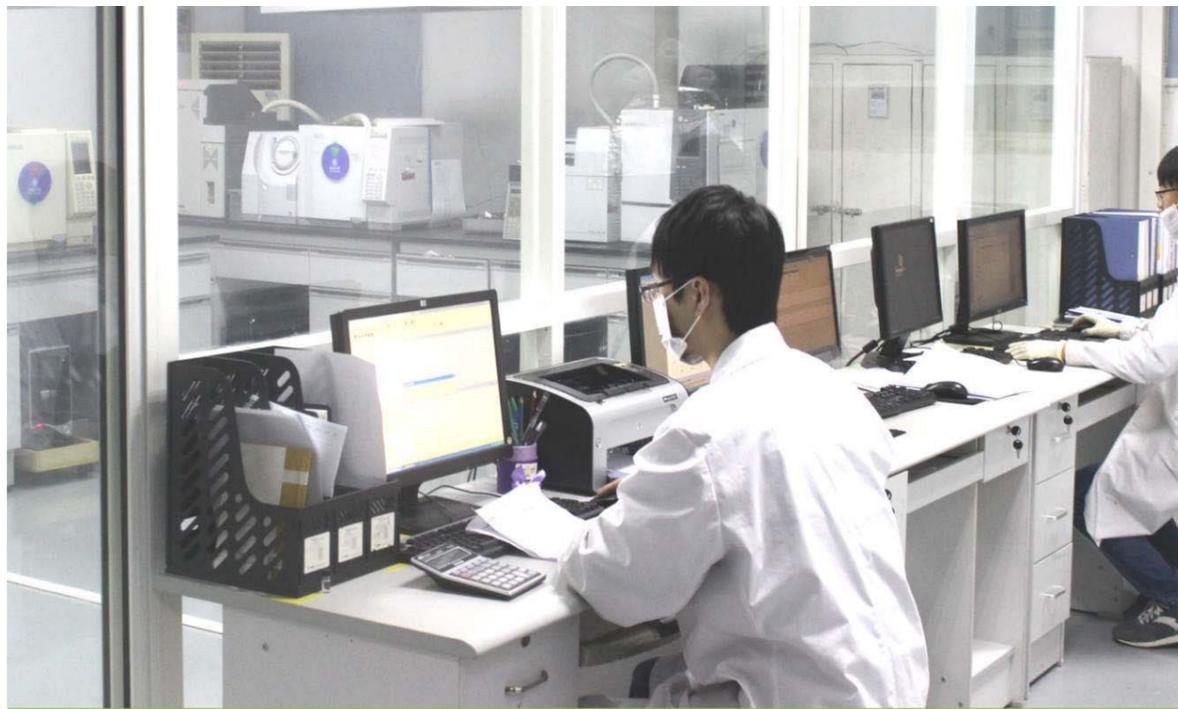
光伏组件 PV modules	光电模块用接线盒 PV modules junction box
光伏电站 PV power plant	光伏系统连接器 PV system connector
光伏逆变器 PV inverter	光伏控制器 PV controller
太阳能蓄电池 Solar batteries	光伏用电缆 PV cable

■ 测试标准/Test Standards

IEC/EN61215	EN50178
IEC/EN61646	EN50530
IEC/EN61730-1/2	VDE0126-3/5
IEC/EN62108	UL1703
IEC61701	UL498
IEC62446	UL1977
IEEE1547	UL1741
IEC62124	GB/18911
IEC61327	GB/T9535
IEC62116	GB/T20047.1/2
IEC62109-1/2	GB/T19638.2
IEC62133	GB/T22473

■ 服务范围 SERVICE ITEMS

TUV Mark 标志 TUV Mark
 CB测试报告 CB report
 委托测试报告 Test report
 客户委托测试 Client requirement test



Hazardous Substance Lab

有害物质检测实验室

随着科技发展日新月异，电子电气产品已经越来越深入的人们的日常生活中，小到智能手机、充电宝，大到冰箱、空调，以及新兴的智能穿戴设备等，都在深刻的影响和改变着人们的生活。电子电气产品的安全性、环保性也越来越得到重视。NTEK针对电子电气产品为广大客户提供全面、高质量、高效率的有害物质检测服务，为您的健康和美好生活保驾护航。

当前各国、各区域都已出台相关的环保法规，旨在管控产品中有毒物质，保护本国、本区域的健康及环境。NTEK的专业团队经验丰富、技术领先，为您提供欧盟RoHS、中国RoHS、汽车ELV、卤素、REACH、美国加州65、CPSIA以及PAHs、PFOS等法规和项目的专业测试服务。同时为客户提供整体解决方案以及专业建议。

With the rapid development of science and technology, electronic and electrical products have been using deeply in our daily lives, small to smart phones, Portable battery, large to the refrigerator, air conditioning, and emerging smart wear equipment, are in the profound impact and change people's life. Safety of electronic and electrical products, environmental protection has getting more and more focus. NTEK provide our clients comprehensive, high-quality and high-efficiency determination of hazardous substance in electrical and electronic products, escort for your health and better live.

At present, countries and regions have publishes relevant environmental protection regulations to control the hazardous substances in the products to protect the health and the environment of the country and the region. NTEK's professional team is experienced and leading technology to provide you with professional testing services such as EU RoHS, China RoHS, ELV, halogen, REACH, California 65, CPSIA and PAHs, PFOS and other regulations and projects. Meanwhile NTEK provides the overall solution and professional advice to clients.

服务范围 Service Scope



适用范围 Usable Range

欧盟RoHS

适用于投放欧盟市场的 11 大类电子电气产品及其相关组件、材料等。
11 大类电子电气产品：大型家电、小型家电、IT 通讯产品、消费性设备、照明产品、电子电气工具、电动玩具、休闲和运动设备产品、医疗设备产品、监控与控制设备、自动售货机，其他不属于前 10 类的电子电气产品。

欧盟WEEE

欧盟WEEE，即“关于废弃电子电气设备指令”（2012/19/EU）旨在减少电子电气设备所产生的电子电气废物，增加废弃电子电气设备的再使用、再循环和回收，提高电气电气设备的环保功效，更进一步促进电子电气设备的回收设计、开发和生产。

卤素测试

卤素化合物一般以有机化合物的形式存在于产品中，主要用作：阻燃剂、冷冻剂、助焊剂、有机溶剂、隔热材料的臭氧破坏物质、有机化工原料、农药杀虫剂、漂白剂等。

加州65

核心管控要求：禁止引用水源污染、警示要求、有害物质限量要求、企业在进行加州65管控时的要求。

REACH法规

REACH法规，即EC/1907/2006《关于化学品注册，评估，授权和限制的法规》，对在欧盟市场上销售的产品提出了包括注册、限制、授权、通报等要求，对于相关制造商和进口商都要履行相应的义务。同时按批次公布包括致癌、致畸变、生殖毒性、生物累积性等一系列高危害关注物质SVHC (Substance of Very High Concern) 的清单，更有针对性的对高关注物质进行管控和对REACH法规附件XVII中列出的化学物质进行限制，以保障人体健康和保护生态环境。

中国RoHS

《电器电子产品有害物质限制使用管理办法》已正式发布，将对我国境内生产、销售和进口电器电子产品的相关企业产生很大影响。电子电气行业应及时开展组织学习研究新《办法》的各项技术内容，在过渡期内积极准备应对方案，及时调整不合理的生产工艺，积极开展供应链调查管理，确保产品在2016年7月1日后符合新的《办法》。

PAHS测试

PAHS检测范围：电子、电机等消费性产品、橡胶制品、塑料制品、食品包装材料、玩具、容器材料、其它材料等。

EU RoHS

Apply 11 kinds of electrical products and related components, materials and so on to the EU market, 11 kinds of electrical products including: Large household appliances, Small household appliances, IT and telecommunications equipment, Consumer equipment, Lighting equipment, Electrical and electronic tools, Toys, leisure and sports equipment, Medical devices, Monitoring and control instruments including industrial monitoring and control instruments, Automatic dispensers, Other EEE not covered by any of the categories above.

European WEEE

European WEEE, namely Waste Electrical and Electronic Equipment (2012/19 / EU), which aims to reduce electrical waste produced by the electronic electrical equipment, increase the reuse, recycle and recovery of waste electrical and electronic equipment, improve the electrical environmental effect of electrical equipment, further promoting recycling design, development and production of electrical and electronic equipment.

Halogen Test

Halogen compounds contained in product are generally in the form of organic compounds, mainly used: flame retardant, refrigerant, flux, organic solvent, ozone destruction of insulation material, organic chemical raw materials, pesticides, bleach, etc.

Pro65

Control requirements: prohibition of water source pollution, warning demands, harmful material limitation demands, enterprise requirements under the Pro65 control.

REACH Regulation

REACH regulation, namely <Registration, Evaluation, Authorization and Restriction of Chemicals>, the EC / 1907/2006 directive. The products sales in the EU market is proposed including registration, restriction, authorization and reporting requirements, the relevant manufacturers and importers must fulfill corresponding obligations. EU also release a series of high hazard concern substances SVHC (Substance of Very High Concern) list at the same time, including carcinogenic substances, birth defects, reproductive toxicity and bio-accumulation and so on. Making a better control and manage the high attention material of the chemicals listed in annex XVII of the REACH regulation, to safeguard human health and protect the ecological environment.

China RoHS

The management method of the usage of hazardous substances restriction of electric and electronic products has officially released, it would has great effect on the relevant manufacturer, sale, and import companies of electric and electronic products. Electronic and electrical industry should be promptly do research and learn on the technical content of the new method, actively making plan, adjust the unreasonable production process, carry out the supply chain-check management during the transition period to ensure that the products are in line with the new method after July 1, 2016.

PAHS test

PAHS testing scope: electronic, electrical and other consumer products, rubber products, plastic products, food packaging materials, toys, container materials and other materials, etc.





邻苯二甲酸酯管控要求 ■ Phthalic Acid Ester Control Requirements

电池指令

电池中可能含有铅、镉、汞、酸、碱等污染物质，当其任意丢弃在环境中，将会对人体及生态环境造成不同程度的危害。因此，电池中有害物质的限制，废旧电池回收处理和再生利用已经社会各界广泛关注。越来越多的国家也纷纷制定和实施相关政策和规定对电池中有害物质进行管控。

Batteries Directive

Battery may contain pollutants such as lead, cadmium, mercury, acid, alkali. It will create damage to human body and ecological environment to different degrees when it is arbitrarily discarded in the environment. Therefore, the limitation of harmful substances in the cell, waste battery recycling and its reuse has got widespread attention from all walks of life. More and more countries have also formulated and implemented policies and regulations to control harmful substances in the cell.

包装指令

包装物是商品中的不可缺少的部分，在商品流通中具有不可或缺的重要角色。包装材料常在使用过后，被消费者任意地丢弃，进而至环境中，其中所含的危害物质将会直接对环境造成危害。因此，世界各国非常重视包装材料的管控，如欧盟94/62/EC《包装和包装废弃物处理的欧洲议会和理事会指令》对“有害物质限制”、“可重复性”、“可再生利用”、“含再生材料”等包装规定。

Packaging Directive

Packaging is a indispensable part in commodity, and play a important role in the circulation of commodities. Which contains harmful substances would directly cause harm to the environment. The harmful substances in the packaging materials would directly do harm to the environment, when being arbitrarily discarded by consumers after used. Therefore, all countries in the world attaches great importance to the control of packaging materials, such as "hazardous substances limits", "repeatability", "renewable", "containing recycled materials" and other packaging rules of European Parliament and Council of packaging and packaging waste Directive 94/62/EC.



法规	管控物质	管控要求
欧盟 REACH 法规	DEHP、DBP、BBP	1. 玩具或儿童保育用品中，物质本身或混合物，塑化材料中三种邻苯的总质量分数不得大于0.1%； 2. 玩具或儿童保育用品的塑化材料中含有所列的邻苯二甲酸酯质量分数大于0.1%时，不得投放市场； 3. 欧盟委员会应于2010年1月16日前，根据这些物质及其代替品的相关新科学信息对规定进行评估，并据此进行修订。
	DINP、DIDP、DnOP	1. 能被儿童放入口的玩具或儿童保育用品中，作为物质本身或混合物，在塑化材料中三种邻苯的质量分数不得大于0.1%； 2. 能被儿童放入口的玩具或儿童保育用品的塑化材料中含有所列的邻苯二甲酸酯质量分数大于0.1%时，不得投放市场； 3. 同上第3条。
	SVHC 候选清单	如果物品中存在高度关注物质（SVHC）候选清单中的任意一种物质浓度超过0.1% (w/w)，则需要向物品接收方传递相关安全使用信息，如同时该物质每年投放欧盟市场超过1吨，则还须向ECHA进行通报。
附录XIV 授权要求		如果在法规规定的最终期限仍然希望使用附录XIV中的物质，需要向欧洲化学品管理局（ECHA）提交申请，得到授权后方可使用。
欧盟RoHS法规	DEHP、DBP、BBP、DIBP	电子电气产品中均质材料中的限值要求不得大于0.1%
美国CPSIA	DEHP、DBP、BBP	永久性禁令，禁止“儿童玩具”或“儿童护理产品”中浓度超过0.1%（单种邻苯）。
	DINP、DIDP、DnOP	过渡性禁令，禁止能够放入口中的“儿童玩具”或“儿童护理产品”中浓度超过0.1%（单种邻苯）。



Reliability Lab ENVIRONMENTAL 环境可靠性实验室

在竞争日益激烈的今天，产品的功能与外观已不再是品牌企业之间的焦点，产品的质量和环境可靠性越来越受到市场和客户的重视，通过适用各种环境实验设备模拟气候环境中的高温、低温、高温高湿以及温度变化等情况，加速产品在使用环境中可能发生的失效，来验证是否达到在研发、设计、制造中的预期的质量目标，从而对产品整体进行评估，以确定产品可靠性寿命。

Nowadays product function and appearance are no longer the sole focus. Quality and reliability are increasingly valued by markets and customers. Through using various of environmental experimental equipment to simulate climate conditions--high temperature, low temperature, high temperature and humidity and temperature changes, to accelerate the possibility of failure in usage environment, so as to verify whether the quality is at the expectation in research, design, and manufacture process. In this way reliability test can evaluate the overall product to guarantee the product reliability of life period.

服务范围 ■ Service Scope

温湿度试验 ■ Temperature humidity Test

温湿度实验适用于可能在温暖潮湿的环境中使用的产品。对塑性材料、PCB、PCBA 多孔性材料或成品等而言，多种不同材料对温度与湿气有不同形态之物理反应，温度所产生效应多为塑性变形，会使产品过温或低温而启动不良等，多孔性材料在湿度环境下会因毛细孔效应而出现表面湿气吸附、渗入、凝结等情形，在低温环境中会因静电荷累积效应诱发产品出现失效。

Temperature and humidity test are applicable to products that may be used in warm and humid environments. As for plastic materials, PCB, PCBA, porous materials or finished products ect, a variety of different materials would have different forms of physical reaction in different temperature and moisture condition, mostly temperature would cause plastic deformation, which would result in the poor start of the product in the over-temperature or low temperature. Capillary effect can induce the surface of porous materials appear moisture adsorption, infiltration, condensation, etc, in the humidity environment, electrostatic charge accumulation effect can induced product failure in the low-temperature environment.

高温测试\低温测试\恒定湿热试验\温度变化试验\交变湿热试验\温度湿度组合循环试验\快速温变试验\冷热冲击试验

High temperature test \ low temperature test \ constant damp heat test \ temperature change test \ alternating humidity test \ temperature and humidity combined cycle test \ Rapid temperature change test \ Thermal shock test.

测试标准 ■ Test Standards

GB/T2423.1	GB/T2423.2	GB/T2423.3	GB/T 2423.4	GB/T 2423.22	GB/T 2423.34
IEC 60068-2-2	IEC 60068-2-1	IEC 60068-2-78	IEC 60068-2-14	IEC60068-2-30	IEC 60068-2-38
EN 60068-2-2	EN 60068-2-1	EN 60068-2-78	EN 60068-2-14	EN 60068-2-30	EN 60068-2-38

光老化试验 ■ Photo Aging Test

涂料、塑料等高分子材料在使用过程中经常出现粉化、变色、起泡、裂纹、脱落等现象，严重影响产品的机械、外观等方面的性能，因此需要了解高分子材料的光老化机理并寻找合适的人工加速光老化试验方法来客观地模拟自然使用条件，为材料的研发及应用提供快速的检测与评价方面的依据。目前常用的人工加速老化试验方法主要有碳弧灯、氙灯、荧光紫外灯（QUV）、金属卤素灯等。

The painting, plastic and other polymer materials often occurs the phenomenon like pulverization, discoloration, blistering, cracking, be off the surface etc, which would seriously affect their functions of the mechanical performance and appearance. So researching the light aging mechanism of polymer materials is needed for us to find the suitable artificial aging test, which can approach to objectively simulate the natural conditions of material usage and to provide rapid detection and evaluation for the development and application of materials. The common test methods are mainly carbon arc lamp, xenon lamp, fluorescent UV lamp (QUV), metal halide lamps etc.

氙灯老化 ■ Xenon-Arc Weathering

氙灯测试是用氙灯模拟全光谱太阳光的破坏效果，用喷淋来模拟雨、露、曝晒、黑暗的效果。模拟在不同的环境下，材料暴露在阳光下所产生的变化。

Xenon test is the destruction of the effect of simulated full spectrum sunlight with a xenon lamp, it used to simulate the spray rain, dew, exposure, dark effect to observe the change of the material in the sunlight under different conditions.

测试标准 ■ Test Standards

GB/T 1865	ISO 16474-1	ISO 4892-2	GB/T 16422.2	ASTM D1248	ASTM D4459
PV 1303	PV 3930	SAE J1885	SAE J2412	SAE J2527	

碳弧灯测试 ■ Carbon Arc Lamp Test

碳弧灯是一种较古老的技术，碳弧仪器最初被德国合成染料化学家用来评估被染纺织品的耐光度（广泛使用到蓝色羊毛标样）。由于该项目技术的历史较长，最初的人工模拟光老化技术都是采用该设备，因此在早前的标准中还能见到该方法，尤其是在日本的早期标准中常常采用碳弧灯技术作为人工光老化试验手段。

Carbon arc lamp is a relatively old technology, carbon arc instrument was first used by chemists to assess the light fastness of dyed textiles (widely used to the blue wool standard). Because of the project technology of long history, the first artificial light aging technology is the use of the equipment, so it can see this method in the earlier standard, especially often used as the light of artificial aging test method in Japan in the early standard technology of carbon arc lamp.

测试标准 ■ Test Standards

JIS D0205	GB/T 16422.3	ISO 4892.3	ASTM G153	JIS B7753
-----------	--------------	------------	-----------	-----------

紫外老化 ■ UV Aging

紫外老化试验机不是模拟全光谱太阳光，但是却模拟太阳光的破坏作用。通过把荧光灯管的主要辐射控制在太阳光谱的紫外波段来实现。实验设备采用紫外线荧光灯模拟阳光，同时还可以通过冷凝或喷淋的方式模拟湿气影响。用来评估材料在颜色变化、光泽、裂纹、起泡、粉化、氧化等方面的变化。

UV aging testing machine does not simulate a full spectrum of the sun light, but simulate the damaging effects of sunlight. To achieve by controlling the main radiation of fluorescent tubes within ultraviolet band. The ultraviolet fluorescent lamp is used to simulate sunlight as well as the impact of moisture through condensation or spray. After the test, we will assess the changes of material in color, gloss, cracking, blistering, pulverization, oxidation etc.

测试标准 ■ Test Standards

GB/T 16422.3	ASTM G154	SAE J2020	ISO 11507	ASTM D4329	ASTM D4674
ASTM D6662	DIN 53 384	ISO 4892-3			

金属卤素灯 ■ Metal Halide Lamp

金属卤素灯主要适用于UV油墨、UV油漆的固化，干膜、湿膜，绿色阻焊及板曝光。

Metal halide lamp is mainly suitable for UV ink, UV paint curing, dry film, wet film, green solder and plate exposure.

测试标准 ■ Test Standards

GB/T 2423.24	IEC 60068-2-5
--------------	---------------



腐蚀试验 ■ Corrosion Test

腐蚀试验是检测金属或其他材料因与环境发生相互作用而引起的化学或物理(或机械) - 化学损伤过程的材料试验。 腐蚀试验是掌握材料与环境所构成的腐蚀体系的特性,了解腐蚀机制,从而对腐蚀过程进行控制的重要手段。

Corrosion test is a kind of material test to detect the chemical or physical (or mechanical) chemical damage process caused by the interaction between metal and other materials. The corrosion test is an important means to control the corrosion mechanism and to control the corrosion process.

普通盐雾 ■ Common Salt Spray

利用喷雾装置将质量分数为5%左右的氯化钠溶液转变成盐雾,进行自由沉降,使盐雾能均匀地落在试样表面,使金属表面加速腐蚀。普通盐雾包括中性盐雾、酸性盐雾和铜加速盐雾。

The spraying device will change about 5% mass fraction of Sodium Chloride Solution salt fog, to perform the free settlement, the salt fog can uniformly fall on the surface of the sample. Common salt spray includes neutral salt fog, acid salt spray and copper accelerated salt spray.

测试标准 ■ Test Standards

GB/T 10125-2012	ISO 9227	ASTM B117-2003	DIN 50021	GB/T 2423.17	IEC 60068-2-11
GB/T 10125	ISO 9227	ASTM B 117	GB.T 2423.18	IEC 60068-2-52	ASTM B 368
MIL-STD-202					

循环盐雾 ■ Cyclic Salt Spray

循环盐雾试验由于温度和湿度不断变化,腐蚀类型包含化学腐蚀和电化学腐蚀。试验一般进行多个循环过程,模拟实际环境中的湿热、干热等极端气候情况,特别是在水分蒸发、盐沉积的试验阶段,干燥的样品表面上盐溶液浓度较高,会导致覆盖层表面腐蚀速率加快。除此之外,样品由湿变干的过程中由于其表面与氧气接触充分,也直接加速了腐蚀反应。

The corrosion types of cyclic salt spray test include chemical corrosion and electrochemical corrosion due to the change of temperature and humidity. The test is a multi cycle process, is the simulation of extreme weather conditions in the actual environment, especially in the hot damp heat environment and during water evaporation. Salt deposition and the drying of sample surface will lead to higher salt concentration and the covering surface of corrosion rate. In addition, the process would also directly accelerated the corrosion reaction due to its surface contact with oxygen.

测试标准 ■ Test Standards

ASTM G85-09	SAE J2334-2002	IEC 68-2-52	ISO 14993-2001	GB/T 2423.18	PV 1210
GMW 14872	FLTM BI123-03				

气体腐蚀 ■ Gas Corrosion

气体腐蚀试验利用二氧化硫,二氧化氮,氯气,硫化氢等几种气体,在一定的温度和相对的湿度的环境下对材料或产品进行加速腐蚀,重现材料或产品在一定时间范围内所遭受的破坏程度。以及相似防护层的工艺质量比较,用于确定零部件、电子元件、金属材料、电工,电子等产品的防护层以及工业产品在混合气体中的腐蚀能力。

Gas corrosion test can reproduce the damage degree of materials or products within a certain time by using sulfur dioxide, nitrogen dioxide, chlorine, hydrogen sulfide and other gases at a certain temperature and relative humidity of the environment to accelerated corrosion damage of materials or products. It is used to determine the corrosion resistance and the comparison of the quality of the similar protective layer of parts, electronic components, metal materials, electrical and electronic products, and industrial products in the mixed gas.

测试标准 ■ Test Standards

GB/T 2426.51-2000	GB/9789-88	DIN 50018	GB2423.19-81	GB2423.20-81	GB2423.33-89
-------------------	------------	-----------	--------------	--------------	--------------

冷凝水测试 ■ Condensate Test

冷凝水测试是通过密闭的人工试验箱模拟潮湿闷热大气环境的一种人工加速老化试验,目前常用的冷凝水测试方法为静态模拟试验,即整个过程在人工试验箱的有效空间内保持稳定的恒温高湿的氛围,固定在测试箱体中的受试材料表面维持连续的冷凝过程,即不断有水滴凝聚在材料表面。

Condensate test is an artificial accelerated aging test by artificially simulate hot and humid atmosphere in a closed testing box. Its test method commonly is the static simulation, to keep the box in a stable temperature and high humidity atmosphere to maintain the continuous surface condensation process, which means there are continuous water droplets on the material surfaces during the test.

测试标准 ■ Test Standards

ISO 6270-2	DIN 50017	DIN 50018	GB2423.19-81	GB2423.20-81	GB2423.33-89
------------	-----------	-----------	--------------	--------------	--------------

机械类测试 (振动、冲击、跌落) ■ Mechanical Test (Vibration, Shock, Drop)

振动试验是模拟一连串振动现象,测试产品在寿命周期中是否能承受运输或使用过程的振动环境的考验,也能确定产品设计和功能的要求标准。

Vibration test is a test to simulate a series of vibration phenomenon, test whether the product can withstand the vibration environment of transportation or use in the life cycle.

冲击是骤然的、剧烈的能量释放、能量转换和能量传递,冲击持续时间短暂,冲击的过程一次性完成而不呈现周期性。

Shock is a sudden, violent energy release, energy conversion and energy transfer, the impact of a short duration, the impact of a one-time process without a cyclical.

跌落试验是规定产品从某一高度跌落到试验表面的一个过程,确认产品在搬运期间由于粗率装卸遭到跌落的适应性。

Drop test is required in falling from a height to a test surface, confirm the product during handling due to rough handling by drop adaptability.

测试标准 ■ Test Standards

振动测试

正弦振动 GB/T 2423.10 IEC 60068-2-6 EN 60068-2-6 ISO 8318 GB/T 4857.10 ISO 2247 GB/T 4857.7

随机振动 GB/T 2423.56 IEC 60068-2-64

冲击测试 GB/T 2423.5 IEC 60068-2-27 GB/T 2425.6

碰撞测试 GB/T 4857.20

跌落测试 GB/T 2423.8 IEC 60068-2-31

三综合试验 ■ Three Comprehensive Test

综合环境测试是两种环境应力相结合的因素,综合环境的作用能更真实、更实际的反应出产品在现场使用中的性能,更能暴露产品的缺陷。

Integrated environmental testing is a combination of two environmental stress factors, the role of the integrated environment can be more real, more realistic response to the performance of the products in the field of use, more able to expose the defects of the product.

测试标准 ■ Test Standards

GB/T 2423.35	GB/T 2423.36
--------------	--------------

IP 防护 ■ IP Protection

Ip等级测试主要用于考核各类电气产品外壳及密封件在粉尘、潮湿、淋水或潜水等各种严酷环境条件下其外壳防护的可靠性,以验证产品及元器件的工作性能是否会受到损害,同时亦对人体防止接触危险部件提供了相应保护要求。

IP class test is mainly used for the assessment of shells' protection reliability of all kinds of electrical products and shell seals in the dust, moisture, water or diving and other harsh environment. Its purpose is to verify the performance of products and component and to provide the corresponding protection of the human body at the same time because people will contact with hazardous components while using.

防尘 ■ Dustproof

IP1X~IP4X防固体/防触电 IP5X粉尘测试 IP6X尘密测试

IP1X~IP4X Solid / Shock proof IP5X Dust test IP6X Dust test

防水 ■ Waterproof

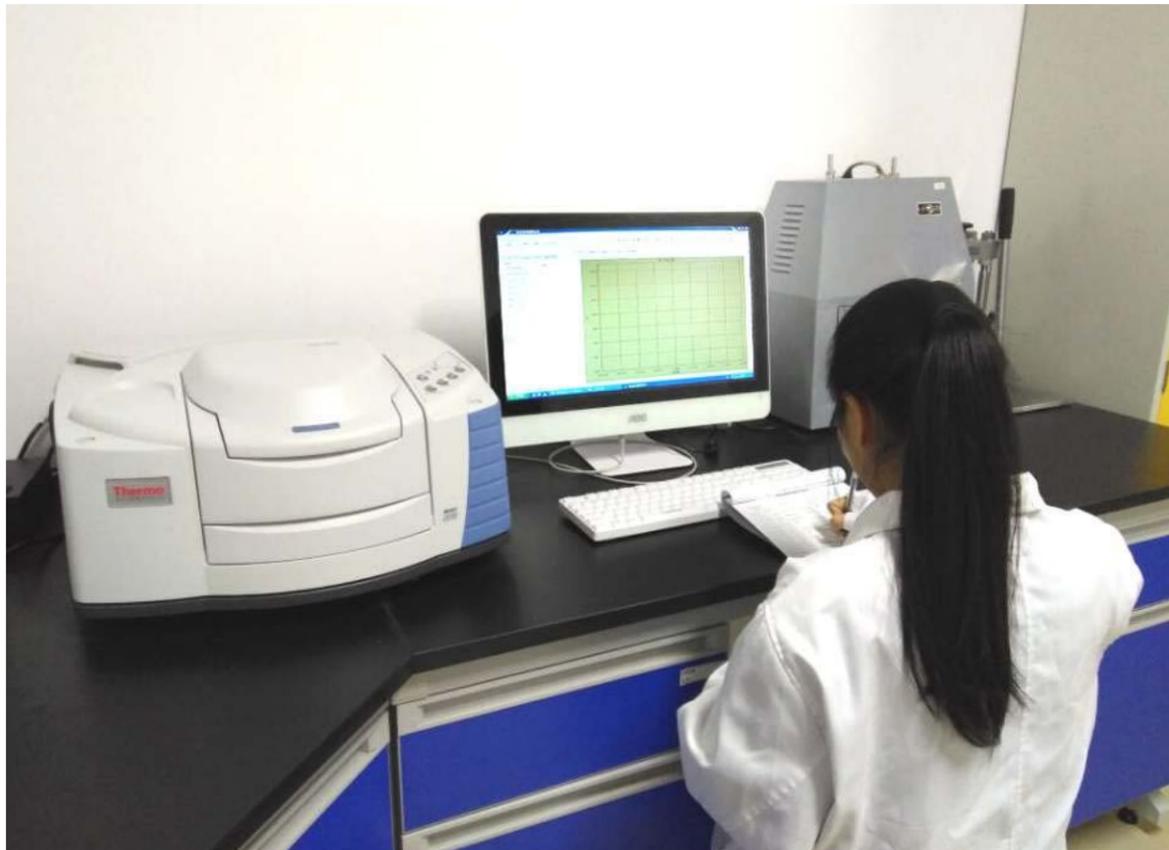
IPX1~IPX2滴水试验 IPX3~IPX4淋水试验 IPX5~IPX6冲水试验 IPX7浸水试验 IPX8潜水试验

IPX1~IPX2 Drop test IPX3~IPX4 Water test IPX5~IPX6 Hose test IPX7 Immersion test IPX8 Diving test

测试标准 ■ Test Standards

GB 4208	GB/T 2423.37	IEC 60529	GB 11918	EN 60529	ISO 20563
GB/T 2951.12					





FAILURE Analysis Lab

失效分析实验室

NTEK失效分析服务，主要包括针对产品研发、试制、生产及来料质量保证方面的性能测试，含成分分析、机械性能、热学性能、电学性能、化学性能及可靠性评价；针对电子产品在研发阶段、可靠性测试阶段、客户端使用阶段发生的失效提供分析服务；针对电子产品的结构可靠性、工艺可靠性、性能可靠性及长期使用可靠性提供产品分析评测服务。针对供应链产品提供可靠性质量保证测试及分析服务。

NTEK拥有经验丰富的员工、配有尖端分析设备、凭借行业优势、本地资质认证和对各种分析技术帮助企业提高产品质量。

NTEK service failure analysis, including the performance test of the assurance for product development, manufacture, production and quality, including composition analysis, mechanical properties, thermal properties, electrical properties, chemical properties and reliability evaluation for electronic products; provide service in the development stage, failure analysis reliability test stage, stage of client according to the structure; reliability, electronic products process reliability, performance reliability and reliability of long-term use product evaluation service. Provide quality assurance testing and analysis services for supply chain products.

NTEK has experienced staff, equipped with sophisticated analytical equipment, with industry advantages, local quality certification and a variety of analysis technology to help companies improve product quality.

服务范围 ■ Service Scope

产品合规评价、工艺优化、产品失效诊断、材料数据库 OEM厂商评价、关键供应商评价、关键工艺控制材料的规范化设计、质量控制产品服役条件下，零部件及材料评价建立材料、零部件、整车耐候性三级评价控制体系。

Product compliance evaluation, process optimization, product failure diagnosis, OEM material database vendor evaluation, key supplier evaluation, key process control and standardization of material design, product quality control under service conditions, building materials, automobile parts, weatherability three grade evaluation control system evaluation of spare parts and materials.

测试项目 ■ Test Items

■ 复合材料失效分析及检测

机械性能	热学性能	电学性能	机械性能	热学性能
外观检测	燃烧性	表面电阻率	密度	弹性模量
断裂伸长率	UL94燃烧性/阻燃性	体积电阻率	伸长率	
弯曲模量	失重温度(热降解特性)	耐电压	撕裂强度	
悬臂梁缺口冲击强度	玻璃化转变温度(Tg)	击穿电压	零部件清洁度	
尺寸稳定性	玻璃化转变温度(Tg)	介质损耗角正切值	表面污染性	
拉伸模量	热膨胀系数	介电常数	压缩模量	
抗弯曲	橡胶脆化温度		压缩强度	
简支梁缺口冲击强度	热变形温度		压缩永久变形	
光泽	维卡软化温度		塑料吸水率	
拉伸强度	熔融指数		铅笔硬度	
落锤冲击试验	导热系数(热流法)		耐磨损	
邵氏硬度(A型/D型)	热阻(热流法)		撕破强度	

金属材料及构件失效分析与检测 ■ Failure Analysis and Test of Metal Materials and Components

成分定量分析、成分定性分析、微观断口分析、宏观断口分析、腐蚀失效分析、磨损失效分析、断裂失效分析、断口金相组织
Quantitative Analysis of Component, Qualitative Analysis of Component, Microscopic View of Fracture, Macroscopic View of Fracture, Corrosion Failure Analysis, Wear Failure Analysis, Fracture Failure Analysis, Microstructure of Fracture

■ 扫描声学显微镜(SAM)

超声波在介质中传输时，若遇到不同密度或弹性系数的物质，会产生反射回波，而这种反射回波强度会因材料密度不同而有所差异，扫描声学显微镜利用此特性来检出材料内部缺陷并依所接收的信号变化将之成图像。超声波能穿透密集和疏松的固体材料，对于内部存在的空气层非常的敏感，空气层能阻断超声波的传输。确定焊接层、粘接层、填充层、涂镀层、结合层的完整是SAM独特的性能。

扫描声学显微镜的频率范围为1~500MHz，空间分辨率达0.1μm，扫描面积达(0.25~300mm)²，能完成超声波传输时间测量(A-Scan)，纵向截面成像(B-Scan)，X/Y二维成像(C,D,G,X-Scan)和三维扫描与成像。

扫描声学显微镜常用于检测电子元器件、材料及PCB/PCBA内部的各种缺陷(如裂纹、分层、夹杂物、附着物及空洞等)

When transmitting in the medium, ultrasonic will produce the echo after encountering the different density or the elastic coefficient of the material, which intensity will vary due to the different material density. Scanning Acoustic Microscope using the feature to detect material internal defects and generate image in accordance with the received signal changes. Ultrasound can penetrate solid materials however it is denser loose, it is very sensitive to the present air layer, which can block the transmission of ultrasound. Determining the integrity of the weld layer, the adhesive layer, the filling layer, the coating layer and the bonding layer is the unique properties of SAM.

The Scanning Acoustic Microscope has a frequency range of 1~500MHz, a spatial resolution of 0.1μm and a scanning area of 0.25~300mm. It has the time of ultrasonic transmission measuring (A-Scan), longitudinal section imaging (B-Scan), X Dimensional imaging (C, D, G, X-Scan) and three-dimensional scanning and imaging.

Scanning Acoustic Microscopy is commonly used to detect defects in electronic components, materials and PCB/PCBA (such as cracks, delaminations, inclusions, attachments and voids, etc.).

常规测试项目 ■ General Test Items

■ 复合材料失效分析及检测

PCB产品以下失效情况分析：板面起泡、分层，阻焊膜脱落、板面发黑、迁移、氧化腐蚀（含验证试验，168h/596h）开路、短路（导通孔质量~电路设计）。

Failure analysis and test of composite materials

Analysis of PCB products following failure: surface blistering, delamination, peeling, solder mask surface blackening, migration, oxidation and corrosion (including test, 168h/596h) open circuit (via quality to circuit design).

针对PCB的检测主要有以下几个方面

PCB的机械性能	PCB的热学性能	PCB可靠性测试	PCB电性能测试
外观检验	导热系数	清洁度（离子污染）测试	耐电压
尺寸测量	热阻	吸湿（水）性	绝缘电阻测试
微观尺寸检测	热膨胀系数	覆铜箔层压板试验	耐湿性及绝缘电阻
孔尺寸测量	热失重温度	盐雾试验	表面/体积电阻率
孔金属镀层尺寸测量	爆板时间T260/T288	多层印制电路板机械冲击热循环测试金属	热循环测试金属化孔电阻变化
侧蚀/凹蚀	热裂解温度Td	刚性印制线路耐振动	
弯曲强度试验	热应力	刚性印制板热冲击	
刚性绝缘层压材料抗弯曲强度	阻燃性试验（塑料、PCB基板）	耐热油性	
抗剥离强度测试（覆铜板、PCB）	可焊性测试	霉菌试验	
铜箔延伸率	镀层通孔（镀覆孔）热应力试验	热应力	
镀层附着力	玻璃化转变温度	蒸汽老化	
镀层孔隙率		可焊性试验	
翘曲度测试			
抗拉强度试验 非支撑元件孔连接盘粘合强度、粘结强度，表面组装焊盘垂直拉脱试验			



■ 电子元器件失效分析与检测

电子元器件的工艺适用评价：回流敏感度测试依据标准J-STD 020包括温湿度处理以及回流焊、可焊性测试、金属层耐溶解性试验、耐焊接热试验。

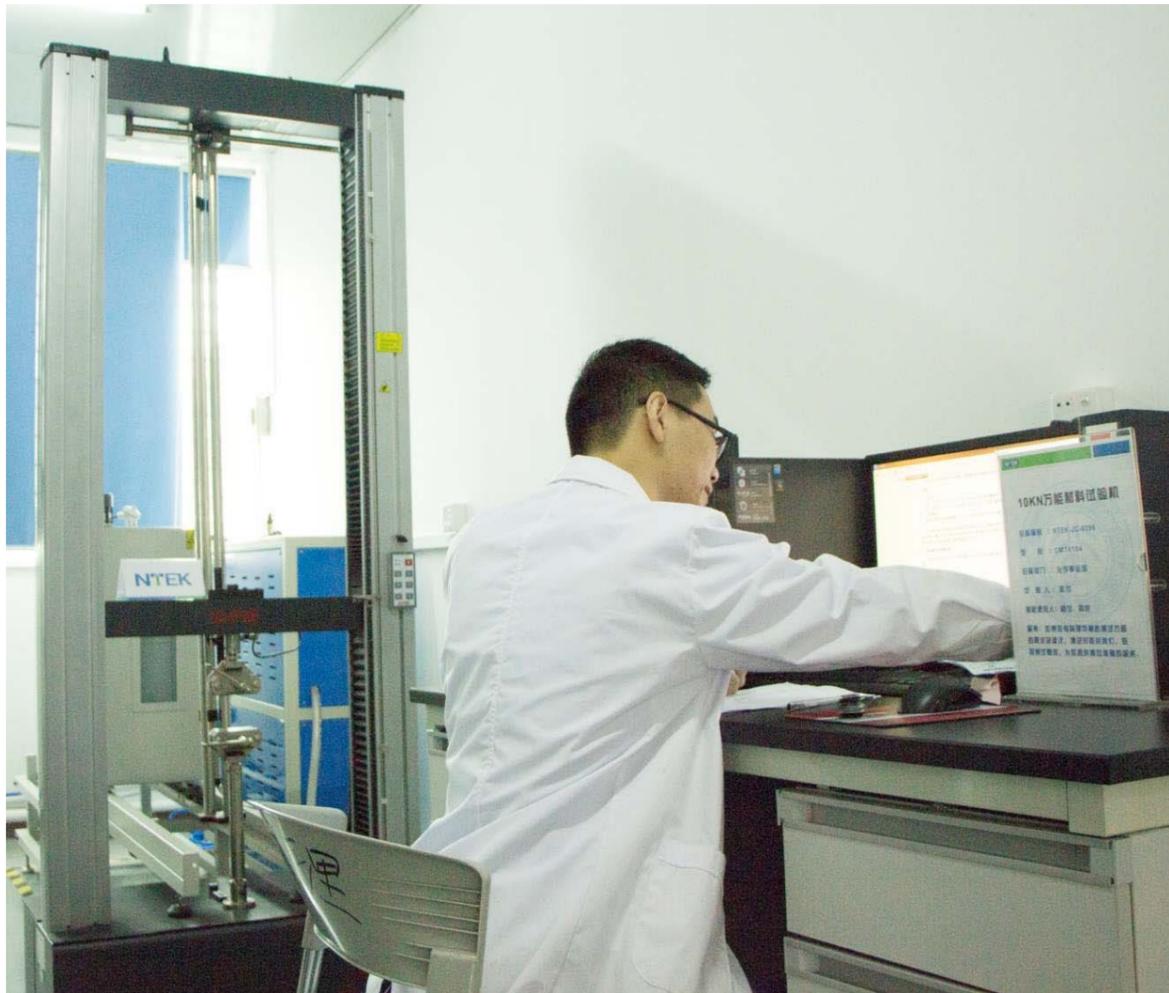
Failure analysis and detection of electronic components

Process evaluation of electronic components: Reflow Sensitivity Test Based on standard J-STD 020 including temperature and humidity treatment and reflow soldering, solderability test, metal layer resistance test, welding heat resistance test.

电子元器件的常规检测

高解析度显微拍照	开封	芯片粘结强度	EELS
BGA(PCB)&IC电路提图服务	取晶粒	背面研磨	AFM
高/低阶制定点横截面切割	扫描电镜检查	TEM	C-AFM
EMMILC 液晶热点侦测	芯片层次去除	AES	SIMS
OBIRCH 应用	去金凸块	XPS	TOF-SIM
静电放电 (ESD) 测试	染色	XRD	X射线透视检查
探针应用	STEM	超声波扫描检查 (C-SAM)	FIB-线路修补
LCR应用	I-V曲线量测	引线键合强度	激光切割





Material Test Lab

材料实验室

高分子物理材料性能是指材料在不同环境（温度、介质、湿度）下，承受各种外加载荷（拉伸、压缩、弯曲、扭转、冲击、交变应力等）时所表现出的相关特征，并针对高分子材料可提供物理测试及分析服务。

金属材料涉及对黑色金属、有色金属、机械设备及零部件等的机械性能测试、化学成分分析、金相分析、精密尺寸测量、无损探伤、耐腐蚀试验和环境模拟测试等并针对金属材料可提供测试及分析服务，认可标准覆盖 GB、ISO、ASTM、EN 等主流标准体系。

NTEK 拥有经验丰富的测试工程师，配有高端测试仪器及分析仪器，保证给客户提高产品质量。

The polymer material in different environment (temperature, humidity, medium), subjected to various loading (tensile, compression, bending, torsion, shock, alternating stress) characteristics shown, and the polymer material can provide physical testing and analysis services.

Material inspection scope of ferrous metals, nonferrous metals, machinery and equipment and spare parts, mechanical test, chemical composition analysis, metallographic analysis, precision measurement, nondestructive testing, corrosion testing and environmental simulation test for metallic materials and provides testing and analysis services, standard covers GB, ISO, ASTM, EN and other mainstream standard system.

NTEK has experienced test engineers, equipped with sophisticated testing equipment and analytical instruments, to ensure that customers improve product quality.

服务范围 ■ Service Scope

钢板, 型钢, 钢棒, 不锈钢, 有色金属材料等
Steel plate, section steel, steel bar, stainless steel, non-ferrous metal materials, and etc.

Test Items 测试项目	Test Standard 测试标准	Test Period 测试周期	Test Items 测试项目	Test Standard 测试标准	Test Period 测试周期	
拉伸试验 Tension Test	屈服强度	5个工作日 (一个样品做2根试样, 每根长度大于240mm)	有效硬化层深度 Effective Thickness of Hardness Layers	GB/T 9451-2005 GB/T 5617-2005	5个工作日	
	抗拉强度		镀锌量试验 Zinc Coating Mass Test	GB/T 1839-2003 ASTM A90-2001 ISO 1460-1992	7个工作日 样品 2 块, 10cm*10cm	
	规定非比例延伸强度			ASTM E8-04 ISO 6892-1998 GB/T 228-2002	光学显微镜 库仑法	GB/T 3815-1997
	断后伸长率		ASTM B764-04 GB/T 4955-1997			5个工作日
	断面收缩率					
压缩试验 Compression Test	压缩屈服点	5个工作日 (样品长度大于240mm)	低温冲击 Low Temperature Impact Test	ASTM E23-2005 GB/T 229-1994 ISO 148-2006(V-notch)	5个工作日 (样品长度>1um)	
	抗压强度		ASTM E9a-1989 GB/T 7314-2005 ISO 4506:1979	室温冲击 Ambient Temperature Impact Test	ASTM E23-2005 GB/T 229-1994 ISO 148-1-2006 ISO 148-2006(V-notch)	5个工作日
	规定非比例压缩应力					
	规定总压缩应力					
	压缩弹性模量					
弯曲试验 Bending Test	ASTM E290a-1997 GB/T 232-1999 ISO 7438:2005	5个工作日 (样品长度大于240mm)	显微硬度 Micro Hardness	ASTM E384-1999 ISO 4507:2000	5个工作日	
反复弯曲试验 Reverse Bending Test	GB/T 235-1999 ISO 7801:1984	5个工作日 (样品长度大于240mm)	维氏硬度 Vickers Hardness	ASTM E92-2003 GB/T 4340.1-1999 ISO 6507-1:1998	5个工作日	
洛氏硬度 Rockwell Hardness	ASTM E18-03 GB/T 230.1-2004	5个工作日	布氏硬度 Brinell Hardness	ASTM E92-2003 GB/T 4340.1-1999 ISO 6507-1:1998	5个工作日	
表面洛氏硬度 Superficial Rockwell Hardness	ASTM E18-03 GB/T 230.1-2004 ISO 6508-1:2005	5个工作日				

管件类测试 Tube and Pipe Testing

Test Items 测试项目	Test Standard 测试标准	Test Period 测试周期
卷边测试 Flange Testing	ASTM A370 GB/T 245-1997	5个工作日
压扁测试 Flattening Test	BS EN 10233-1994 EN ISO 8492-2004 GB/T 246-1997	5个工作日
管材全截面弯曲 Tube(in full section)-Bend Test	BS EN 10232-1994	5个工作日 (样品长度>1um)



■ 高分子材料性能测试

为了使高分子材料获得更好的应用，需了解高分子材料的组成、含量及某些物理化学性能，需要对高分子材料进行成分分析及性能测试。

In order to get better application of Polymer materials, it is important to understand the composition of polymer materials, content and some physical and chemical properties, to undertake composition and performance test of polymer materials.

- 流变性能：熔体质量（体积）流动速率、模塑收缩率
Rheological properties : melt mass (volume) flow rate, mold shrinkage
- 力学性能：拉伸弹性模量、拉伸应力、拉伸应变、拉伸蠕变模量、弯曲模量、强度、简支梁（悬臂梁）冲击强度、邵氏（洛氏）硬度、压缩强度
Mechanical properties : tensile stress , tensile creep modulus , flexural modulus , strength , Charpy (Izod) impact strength , tensile impact strenrth , Shaw (Rockwell) hardness , the oxygen index
- 热性能：熔融温度、玻璃化转变温度、符合变形温度、维卡软化温度、线性热膨胀系数、燃烧性、氧指数
Tremal properties : melting temperature , glass transition tempersture , deflection temperature under load , Vicat softening temperature , coefficient of linear thermal expansion , combustibility , the oxygen index
- 电性能：相对介电常数、截至苏浩因素、体积电阻率、表面电阻率、电气强度、相比漏电起痕指数
Electrical properties ; relative permittivity , dielectric loss factor , volume resistivity , surface resistivity、electrical strength compared to tracking index
- 其他性能：吸水性、密度、老化性能等
Other properties : water absorption , density and aging properties

■ 材料成分分析 PERFORMANCE TEST OF MATERIALS

材料成分分析在商品生产领域中已广泛使用。国内外许多企业的开发研究系统中都利用材料分析技术注视和跟踪本行业的最新研究成果和发展动态。

High polymer material component analysis has been widely used in the field of commodity. Many enterprises at home and abroad using the material analysis technology to watch and track the latest research results and development trends in the industry for the development of research in the system.

塑料：聚乙烯（PE）、聚丙烯（PP）、聚苯乙烯（PS）、聚氨酯（PA）、聚甲醛（POM）、聚苯硫醚（PPS）、聚碳酸酯（PC）、聚甲基丙烯酸甲酯（PMMA）、聚对苯二甲酸乙二醇酯（PET）等。橡胶：氯丁橡胶（CR）、天然橡胶（NR）、丁苯橡胶（SBR）、丁基橡胶（IIR）、丁腈橡胶（NBR）、乙丙橡胶（EPM）等。

Plastic: polyethylene (PE), polypropylene (PP), polystyrene (PS), polyurethane (PA), polyformaldehyde (POM), polyphenylene sulfide (PPS), polycarbonate (PC), poly (methyl methacrylate (PMMA), polyethylene terephthalate Ethylene glycol ester (PET), etc. Rubber adhesive neoprene (R) C, days Natural rubber (N, R), styrene butadiene rubber (SBR), butyl rubber (IIR), acrylonitrile butadiene rubber (NBR), ethylene propylene rubber (EPM), etc.

涂料剖析：油脂漆、天然树脂漆、酚醛漆、沥青漆、醇酸漆、硝基漆、过氧乙烯漆、环氧漆等。

Permeable analyses: grease paint, natural resin paint, phenolic paint, bitumen paint, alkyd paint, lacquer, ethylene oxide paint, epoxy paint, etc.

有机溶剂剖析：油漆稀释剂、脱漆剂、电子电器行业使用的清洗剂 and 溶剂等。

Organic solvent analyses: paint thinners, paint remover, the detergents and solvents of electrical and electronic industry and so on.

- 常用测试方法与仪器 TEST METHODS AND INSTRUMENT
- 傅立叶变换红外光谱仪（FTIR）
- 裂解/气相色谱/质谱联用仪（PC-GC-MS）
- 高效液相色谱仪（HPLC）
- 热重分析仪（TGA）
- 扫描电子显微镜/X射线能谱仪（SEM/EDS）
- 紫外分光光度计（UV-Vis）

测试标准 ■ Test Standards

测试项目	测试标准
吸水性	GB/T 1034 ASTM D570 ISO 62
落球冲击	Q/SQR.04.094 Q/SQR.04.134(低温) Q/SQR.04.137(低温)
密度	DIN 53749方法A ASTM D792 ISO 1183 GB/T 1033
球压硬度	DIN 53456
耐刮伤	Q/SQR.04.694 Q/SQR.04.137
拉伸强度	HG/T 3088 QC/T 639
拉伸断裂伸长率	GB/T 3923.1 GB/T 3923.2 ISO 13934-1 ISO 13934-2 ASTM D5034 ASTM D5035
拉伸模量	HG/T 3088 QC/T 639
拉伸屈服强度	HG/T 3088 QC/T 639
弯曲强度	GB/T 9341 ISO 178 EN ISO 178 ASTM D790
弯曲模量	GB/T 9341 ISO 178 EN ISO 178 ASTM D790
压缩强度	GB/T 1041 ISO 604 EN ISO604
压缩模量	ASTM D695 ISO 604 GB/T 1041
悬臂梁冲击	ASTM D256(有缺口) ASTM D4812 (无缺口) ISO 180 GB/T 1843
简支梁冲击	ASTM D6110 ISO 179 GB/T 1043
灰分	DIN EN 60 ISO 3451 GB/T 9345 ASTM D5630
压缩永久变形	ASTM D395 ISO 815 ISO 7759
耐老化性	UV:ASTM G 154.REVA SAE J2020 GB/T 23987 EN ISO 11507 GB/T 16422.2 ISO 4892-2 EN ISO 492-2 BS EN ISO 4892-2 ASTM D 4459 ASTM G 155-2013
耐溶剂性	Q/SQR.04.137
耐湿	GB/2423.34 IEC 60068-2-38 EN60068-2-38 EIA-364-31C
邵氏硬度	GB/T 2411 GB/T 531.1 ISO 868 EN ISO 868 ASTM D2240
熔融指数（重量法）	ASTM D1238 ISO 1133 GB/T 3682
熔融指数（体积法）	ASTM D1238 ISO 1133 GB/T 3682
维卡软化点	ASTM D1525 ISO 306 GB/T 1634
热变形温度	ASTM D648 ISO 75 GB/T 1634
熔点	GB/T 16582 ISO 3146
熔点DSC法	ISO 11357 ASTM D3418
玻纤含量	ISO 3451 GB/T 9345 ASTM D5630
橡胶热空气老化性能	GB/T 3512 ASTM D573 DIN 53508 JIS K 6257
氙灯老化	SAE J2412 GB/T 1865 IN ISO 11341 GB/T 16422.2 ISO 4892-2 EN ISO 4892-2 BS EN ISO 4892-2 ASTM D 4459 ASTM G 155 GB/T 2424.14 GB/T 2423.24 EN 60068-2-5 DIN EN 60068-2-5
内饰件燃烧测试	GB/T 8410 FMVSS 302 ISO3795 NES M0094 SAE J369 TI1010 TSM0500 HES D6003



TESTING INDUSTRY

Quality of life

检测产业 生命质量

我们的承诺

遵守国家有关法律法规的规定，遵循客观独立、公平公正、诚实守信原则，恪守职业道德，承担相应社会责任。严格遵守作业程序、执行检验检测/校准规程和标准，客观出具检验检测/校准结果，不受来自商业、财政等方面的干扰和行政人员的干预。对客户的技术、资料、数据以及其它商业机密严格保密，绝不用客户的技术和资料从事技术开发和技术服务。绝不参加任何有损判断独立性和检验检测/校准诚信度的活动。

我们的目标

我们的目标是成为世界上最具竞争力和生产力的服务机构。在我们擅长的检验、鉴定、测试和认证服务领域不断改进、力臻完美。这些核心竞争力也是我们成功的最重要因素。我们只根据是否最具竞争力以及是否能始终如一地向全球客户提供无与伦比的服务，决定要选择的市場。

Our Commitment

NTEK promise we will take the social responsibility in accordance with the relevant state laws and regulations, and follow the principle of objective and independent, fair and justice, honesty and credibility, and abide by professional ethics. NTEK will perform the examination, calibration specifications and standards strictly abide by the procedures, and issued the examination and calibration result without the interference from commercial, financial and administrative personnel's intervention. The customers' information, data and other confidential information will be strictly confidential to ourselves. And we promise will not develop the business in the technical research and services with the customer's technology and information, and never attend any activities that detrimental to the independence judgment, inspection and calibration integrity.

Our Goal

Our goal is to become the world's most competitive and productive service agent and continue to improve ourselves in the inspection, authentication, testing and certification service areas as we always are, which is also the most important factor of our success. The market we chosen depends on our competitive ability and unparalleled service.



我们用最专业的技术，为您提供最好的产品解决方案！

