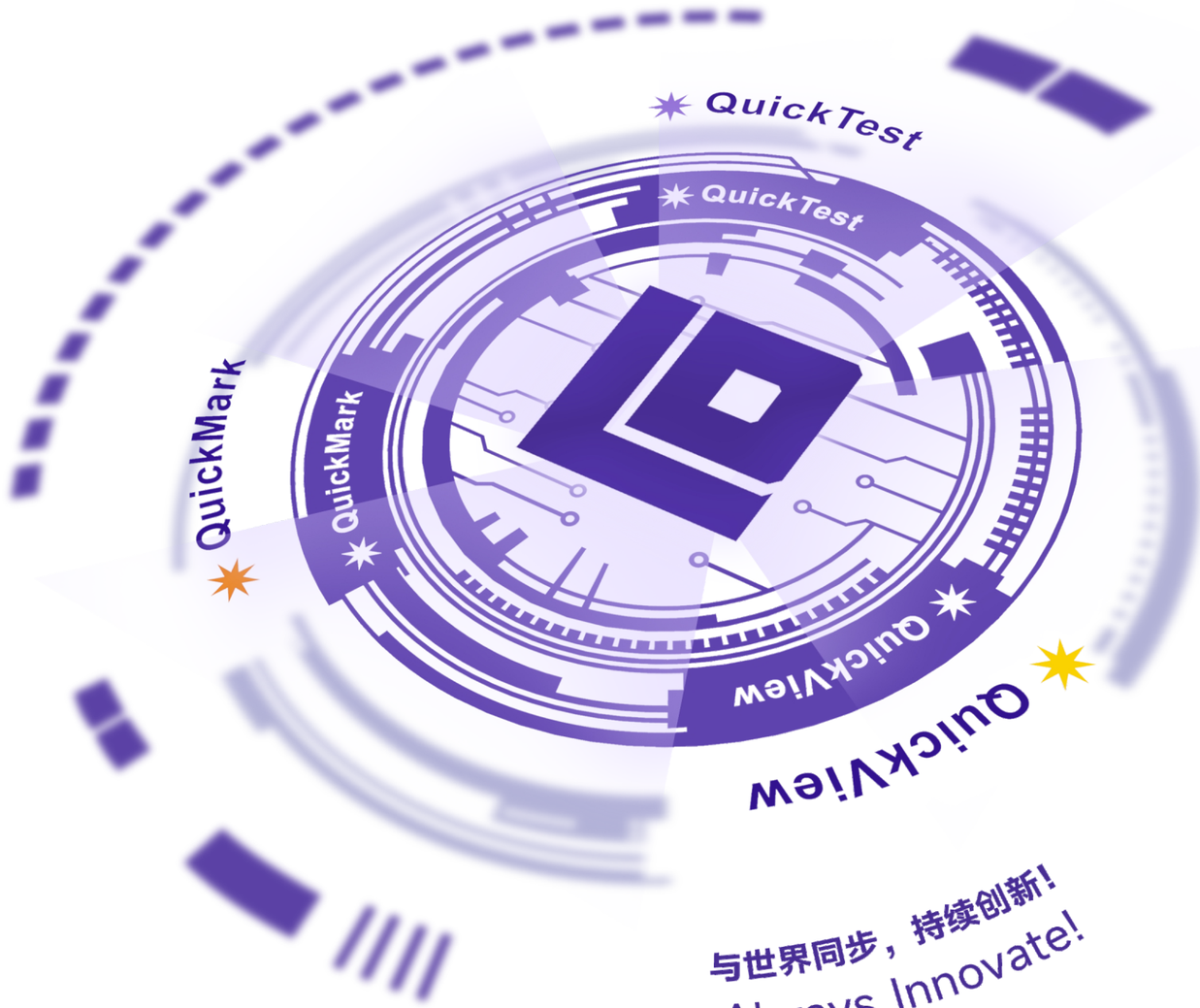
OUR COMMITMENT

- 设备现场应用稳定，符合行业测试技术标准及流程，安全可靠
- 提供专业、优质、更高性价比的半导体工业设备和系统完整的解决方案
- 强大的技术支持和售后服务响应
- 售后保修条款清晰和维修备品配件的保证

- Premium products delivering superior performance, perfectly aligned with the latest market trends
- Full turnkey solution provider
- A global network of professional support teams
- Trusted business partner



与世界同步，持续创新!
Always Innovate!

佛山市联动科技股份有限公司
PowerTECH Co., Ltd.

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联动官网 Official Websit

K4-2501 (2025.01.Version)

股票代码：301369
Stock Code: 301369

Contents 目录

About PowerTECH 关于联动

- 联动科技是半导体封装测试设备的生产制造商，成立于1998年，国家高新技术企业，一直专注于半导体行业的测试设备和封装检测设备的研发、制造和销售。

  Founded in 1998, PowerTECH proudly holds the prestigious title of China National High-Tech Enterprise awarded by the China Government. As a leading manufacturer of test equipment, we specialize in power discrete, power modules, and mixed signal IC test systems. Our core strength lies in the exceptional performance and quality of our products, driven by our dedicated in-house R&D capabilities.

Our Advantages 与众不同，才能出类拔萃

- 联动科技研发中心，专注于半导体行业客户的严谨需求，依据设备技术设计的基础理念，以当今世界前沿科技为技术设计动力，行业行为标准规范为原则，持续创新为根基，为行业应用客户创造价值为动力、解决问题，降低成本，并随需应变。

  At PowerTECH, we prioritize our customers' needs and stay attuned to the latest industry trends. Our innovative solutions are designed to deliver exceptional value, with a steadfast commitment to providing products of the highest quality and performance.

- 联动科技拥有多年的自主研发技术根基，可以及时地提供半导体IC和分立器件测试系统的全面解决方案，并充分满足半导体行业应用客户在实际生产过程中的多层次需求，以及设备后续的不断扩展应用。

  Backed by over 20 years of R&D expertise, our customers can put their trust on us to address their daily challenges with confidence. We are dedicated to delivering excellence through performance, quality, and cost-effective solutions.

- 联动科技产品制造工厂，实施严谨高效地现代化管理流程，质量保证、产能稳定，保证产品的及时交付。为行业客户提供专业装备并不断升级，简单而强大，显著提高生产力。

  Our in-house manufacturing capabilities reflect our commitment to maintaining strict quality control and ensuring timely delivery. At PowerTECH, simplicity and efficiency are at the heart of everything we do.

20 YEARS+

WE CARE FOR ALL YOUR INDUSTRIAL NEEDS...

我们一直在努力! We keep working hard !

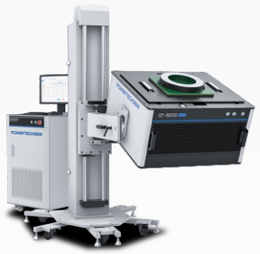
联动科技一直专注于半导体行业的测试设备和封装检测设备的研发、制造和销售。尽管我们在漫长的高新科技发展道路上还有待磨练和不断成长，但是我们研发生产制造的封装测试设备，始终代表着当今世界最高、最快半导体封装测试设备的先进技术发展和趋势。世界变化如此之迅猛，让我们打破旧有的传统思维和技术壁垒，保持持续创新的劲头，才能与世界最高新科技同步，并不断超越。我们潜力无穷，可以给行业应用客户期望的更多... ...

PowerTECH has been a trusted market leader in semiconductor assembly and test equipment for over 20 years. Our self-developed products are designed to meet the demands of the most advanced technologies in the industry.
In a rapidly evolving world, PowerTECH thrives on innovation and forward-thinking solutions, staying ahead of the curve to embrace the latest advancements. Breaking boundaries, we consistently deliver beyond expectations, redefining excellence in semiconductor technology.








1998
创立佛山市联动科技实业有限公司
PowerTECH established in Foshan, China

QT- 4100
中高功率测试系统
Medium To High Power Discrete Test System

QT- 6000
分立器件高速测试系统
High Speed Small Signal Discrete Test System

QT- 4100 (RG/EAS/DV/DC)
综合测试系统
Integrated Test System

QT- 8409 PIM
功率模块测试系统
Power Module PIM

QT- 8400 系列
功率器件 CP/FT IPM
Power Discrete CP/FT IPM

8000V 2000A
高压大电流模组
High-Voltage And High-Current Module

QT- 8100
数模混合IC测试系统
Mixed Signal IC Test System

QT- 8200 PLUS (Hard Docking)
数模混合IC测试系统
Mixed Signal IC Test System

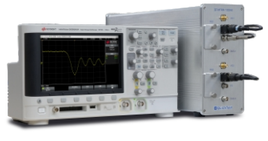
QT- 8600 RF
射频测试系统
RF Test System

Future

激光打标机
Laser Marking System

全自动激光打标系统
Fully Automatic Laser Marking System

QT-3105 TRR
反向恢复时间、电荷测试
TRR, QRR



QT-3107 DLCR
栅极电阻、电容测试
RG, CG

QT-3108 SW
功率器件动态测试
Dynamic Test System

SiC CP 动态测试一体机
SiC CP Dynamic Test System

重力式分选测试一体机
Tester With Gravity Handler
All In One Test Solution

QT-9800
SoC 测试系统
SoC Test System

功率模块测试系统
Power Module Test System

QT- 8409PIM

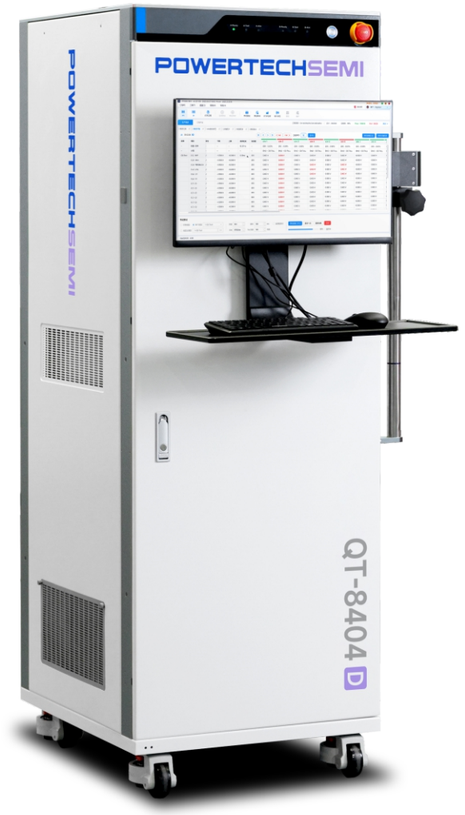
- **主要特点 Key Features**

- 手动测试、半自动测试、全自动测试
- 测试DC参数，SWT，TRR，QG，ISC等，支持雪崩、RGCG、热阻选配
- DC：Max 3000V，3000A
- AC：Max 1500V，3000A，SC12000A
- Ls < 30nH
- 短路保护Clamp < 1us
- 一机多头，支持4个独立的DC或AC测试头

- Manual testing, semi-automatic testing, and fully automatic testing are optional
- DC, SWT, TRR, QG, ISC testing; UIS, RGCG, TR optional
- DC：Max 3000V, 3000A
- AC：Max 1500V, 3000A, SC12000A
- Ls < 30nH
- Short circuit protection Clamp<1us
- Support multiple heads, with 4 independent DC or AC test heads in one test system

高速功率器件测试系统
High Speed Power Discrete Test System

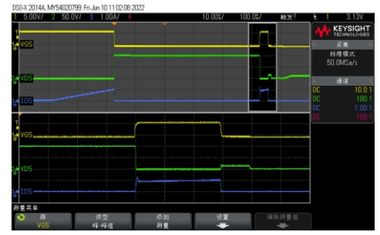
QT- 8404D



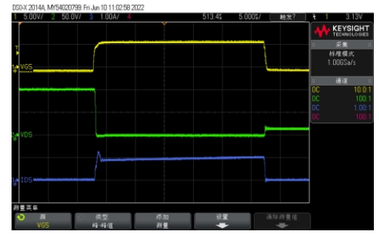
- **测试范围及应用 Test Range and Applications**

- 适用于二极管、三极管、场效应管、IGBT、氮化镓、SiC
- 支持CP或者FT
- 支持GaN 动态RDON

- Suitable for diode, transistor, MOSFET, IGBT, GaN, SiC
- Support CP or FT
- GaN dynamic RDON



电感硬切测量波形 / Inductance Hard Cut Test Waveform



硬切测量时间<1us / Hard Cut Test Time <1us

- **主要技术指标 Key Technical Parameters**

电压/电流 (Max) Voltage/Current (Max)	2000V/200A
电压/电流 (可扩展) Voltage/Current (Expandable)	8000V, 6000V, 3000V/2000A, 1000A, 600A
Low RDON 测试 Low RDON	支持最小测量 0.1mΩ Support minimum measurement of 0.1mΩ
支持多site并测 Support Multiple Sites and Testing	4/8/16 sites 并测 Support up to 4/8/16 parallel test sites
支持扩展AC测试 Support Extended AC Testing	UIL、RGCG、双脉冲SW、Isc、QG、TRR等 UIL, RGCG, dual pulse SW, Isc, QG, TRR, etc

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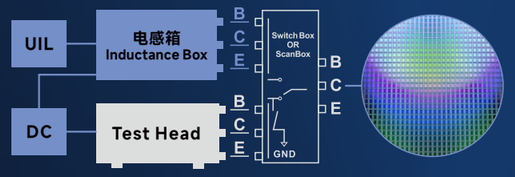
中高功率测试系统 QT- 4100

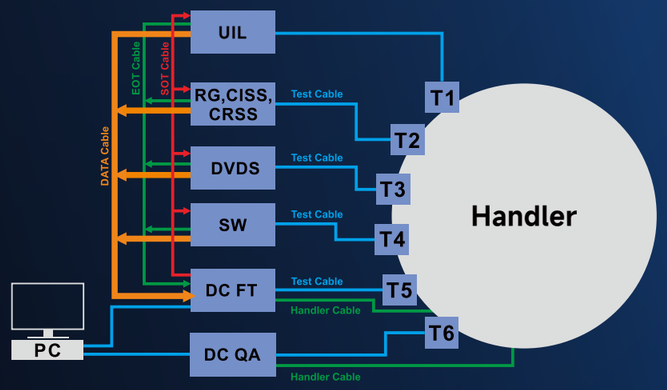
Medium To High Power Discrete Test System

综合测试方案：整合 DC+ UIL+ RGCG+ DVDS+ SW+ QG+ QA 等测试机，由一台PC控制测试程序及收取测试数据，实现数据合并，方便管理和使用。

Comprehensive Testing Solution: Integrating DC+UIL+RGCG+DVDS+SW+QG+QA and other testing modules, controlled by a single PC for running test programs and collecting test data, achieving data consolidation for easy management and utilization.



单 site DC+UIL 可同工位 SiC CP测试
Single-site DC+UIL can be tested in parallel with SiC CP at the same test site



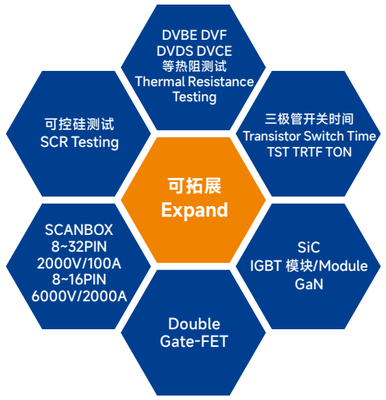
多工位并测适用于FT和KGD测试
Multi-site parallel testing is applicable for FT and KGD testing

QT-4100

中高功率测试系统，适用于MOSFET、SIC、IGBT、氮化镓、二极管、三极管、可控硅、三端稳压、光耦等静态参数测试

Medium To High Power Discrete Test System is suitable for DC parameter testing of MOSFET, SiC, IGBT, Gallium Nitride, diodes, transistors, thyristors, optocouplers, and other discretes

主要特点 Key Features



- 测试覆盖率高，电路工作在限压限流状态，有效保护被测器件
- 测量防呆，电压、电流测量自动自检，异常自动报警停机
- LOW RDON最小误差 <30uΩ，满足SiC GaN第三代半导体测试
- 快速自检：无需外接负载，2分钟完成自检
- 第三方校准：采用Keysight 34461A进行校准
- 内置示波器功能

- High test coverage, the circuit operates in a limited voltage and current state, effectively protecting the tested device
- Error proof measurement, automatic self-check for voltage and current measurements, automatic shutdown with alarms for anomalies
- LOW RDON: Measurement error<30uΩ, meets SiC GaN testing requirements
- Quick self-check: No need for external load, self-check completed in 2 minutes
- Third-party calibration: Calibration is carried out using Keysight 34461A
- Built-in oscilloscope function

主要技术指标 Key Technical Parameters

电压/电流（可选） Voltage/Current (Optional)	2000V, 1000V/200A, 100A, 30A, 10A
电压/电流（可扩展） Voltage/Current (Expandable)	8000V, 6000V, 3000V/2000A, 1000A, 600A
继电器动作时间 Relay Action Time	3ms
Low RDON 测试 Low RDON	0.2mΩ 测试误差 1% 0.2mΩ measurement error 1%
电流精度 Current Accuracy	0.5% + full range0.04% + 1nA
电压精度 Voltage Accuracy	0.5% + full range 0.04% + 1mV

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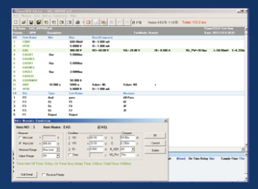
雪崩测试模组
UIL Test System

QT- 3101UIL

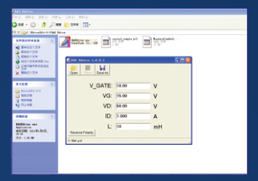
- **主要特点 Key Features**

- 支持UIS/UIL
- 内置示波器
- 支持RPF
- 可设定单脉冲、多脉冲或者双MOSFET测试
- 可与QT-4100共用一台电脑，实现测试程序和数据统一管理
- 晶圆测试爆珠保护
- 显示实际测量的能量(mJ)
- 支持PVDROOP、PVCOLLAPSE测试
- QT-UILM模组：ID电流输出能力提升至400A，BVDSS电压测量5000V

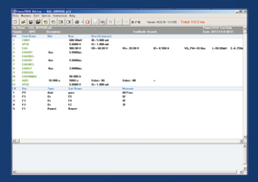
- Supports UIS/UIL
- Built-in oscilloscope
- Supports RPF
- Setting for Setting for single-pulse, multi-pulse, or dual-MOSFET testing
- Can pair with QT-4100, easily to manage on test programs and test data
- Wafer test over current protection
- Display actual measured energy in (mJ)
- Supports PVDROOP or PVCOLLAPSE testing
- QT-UILM maximum output: ID ±400A, BVDSS ±5000V



所有参数都可以在EAS测试项的编辑界面完成
All parameters can be edited via
EAS editor interface



供简单的编辑软件，方便客户使用
只需设置必要的参数
User-friendly editor software



测试时间小于30ms
An EAS test procedure runs less than 30 ms

功率器件动态测试模组
Dynamic Test System

QT- 3108SW

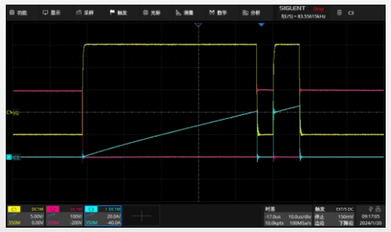
测试项目：单脉冲或者多脉冲
Kelvin、OS、Ton、Toff、Tdon、Tdoff、Eon、Eoff、
Vmax、TRR、QRR、QG、Imax、Dvdt、Isc、Tsc

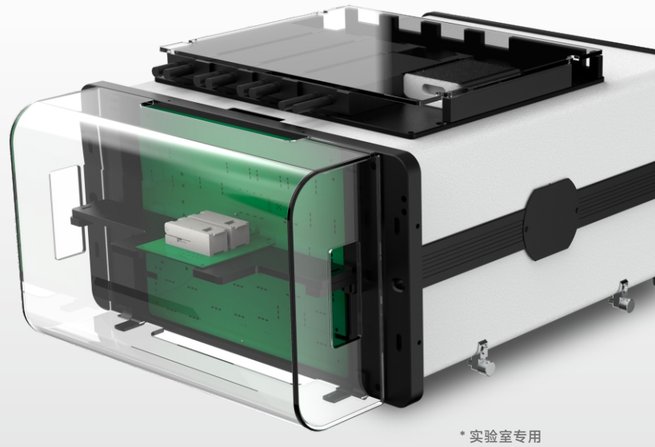
Test Items: Single Pulse or Multiple Pulses
Kelvin, OS, Ton, Toff, Tdon, Tdoff, Eon, Eoff, Vmax,
TRR, QRR, QG, Imax, Dvdt, Isc, Tsc

- **安全及优势指标 Safety & Advantages**

- 1500V/1000A，短路电流最大5000A
- 短路保护<1us
- Ls<30nH
- RG 1~512Ω线性可调
- 负载电感10~1100uH，步进10uH
- 针卡保护电路，支持KGD测试
- 带宽500MHz满足SiC测试

- 1500V/1000A, Maximum short-circuit current 5000A
- Short circuit protection < 1us
- Ls<30nH
- RG adjustable from 1 to 512Ω linearly
- Load inductance 10~1100uH, step 10uH
- Probe card protection circuit, supporting KGD test
- Bandwidth 500MHz, fulfill SiC testing requirements





* 实验室专用
Applied in the Laboratory

RG/CG测试模组

QT- 3107

场效应管 (RG 、CISS 、COSS 、CRSS) 参数或者分立器件电容参数测试

Parameters for MOSFET (RG, CISS, COSS, CRSS) or capacitance parameters for discretes

- **主要技术指标 Key Technical Parameters**

技术参数 Technical Specification	测试限度 Test Limit	输出频率 Output Frequency	100K~1MHz
		直流偏置 DC Bias	-100 ~ 100V, 0.1V步进(step), 支持扩展(expend) 2000V
		输出幅度 Output Amplitude	0.025 ~ 2V, 1mV步进(step)
	测试参数 Test Parameters	CISS, COSS , CRSS, CD: 10fF~100nF, ±(2%+1pF)	
		RG: 0.02Ω~10kΩ, ±(2%+0.1Ω)	

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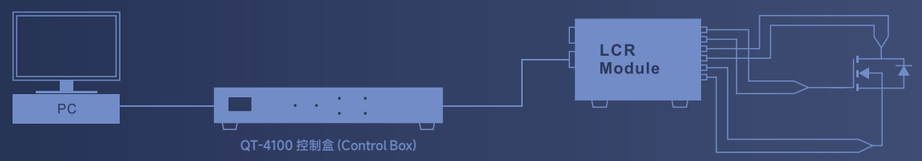
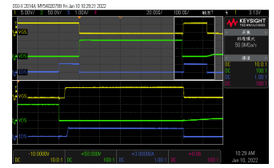
优势：与QT-4100共享计算机软件系统使数据集成更加方便。同时也可以用于高精度电容测试，替代其它的LCR测试设备。
Advantages: Sharing a computer software system with QT-4100 makes data integration more convenient. It can also be used for high-precision capacitance testing, replacing other LCR testing equipment

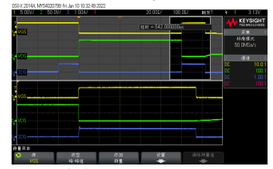


动态GaN DRDON测试模组
Dynamic GaN DRDON Test Module

QT-DRM1010004L

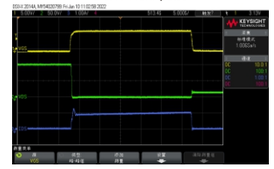

电感软切 Soft cutting of inductance


电感软切 Soft cutting of inductance


电感硬切 Hard cutting of resistance


多脉冲 Multi-pulse

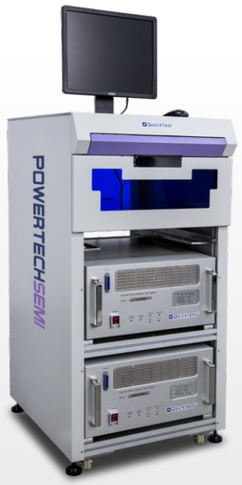

电感硬切测量波形
Inductance Hard Switching Measurement Waveform


硬切测量时间<1us
Hard switching measurement time<1us

IGBT模块测试
IGBT Module

QT-4100扩展模块可实现6000V/2000A以内直流参数模块测试，切换Scanbox
可选8PIN、16PIN、24PIN、32PIN(带GS PIN short功能)

The QT-4100 expansion module can achieve DC parameter testing within 6000V/2000A, including scanbox 8PIN, 16PIN, 24PIN, 32PIN (GS PIN short)




6000V 模块(Module)


1000A 模块(Module)

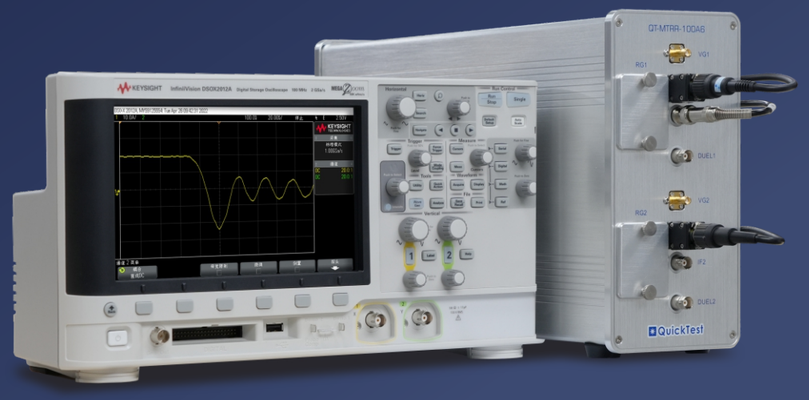

Scanbox

TRR模组

QT- 3105TRR

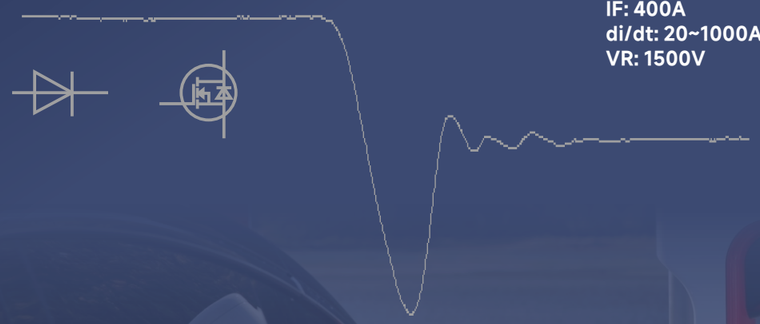
- 外挂QT-4100测试系统
- 显示测量波形
- 动态负载测试
- 可测TRR、QRR、IRM
- 支持双芯测试

- QT-4100 Testing System Integration
- Display measurement waveforms
- Dynamic load testing
- QT-4100 Testing TRR, QRR, IRM
- Supports Dual Die testing



QRR: 0~100uC
TRR: 0~5us
IF: 400A
di/dt: 20~1000A/us
VR: 1500V

分辨率(Resolution): 0.1nC
分辨率(Resolution): 1ns
分辨率(Resolution): 0.1A
分辨率(Resolution): 1A/us
分辨率(Resolution): 0.1V

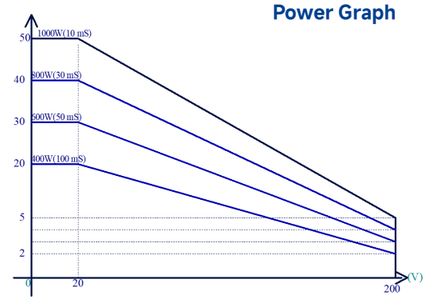


热阻测试系统
Thermal Resistance Test System

QT- 3102

测试范围：三极管、场效应管、IGBT、二极管、选配SCR、支持双芯测试
Applications: Transistor, MOSFET, IGBT, Diode, SCR(option), Supports testing for Dual Die

功率图
Power Graph



主要技术指标 Key Technical Parameters

项目 Test Items	范围 Range	步进 Step	精度 Accuracy
偏置电流 Bias Current IE/IDS	0.01 to 50.00A	0.01A	±(1%+2mA)
测量电流 Measured Current IM	1 to 100mA	1mA	1 to 39 mA ±(1% + 0.2 mA) 40 to 100 mA(±3%)
门限电压 Threshold Voltage Gate-L	1.0 to 20.0V(±5V的固定值初始值) (+5v Default)	0.1V	±0.5V
功耗时间 Power Consumption Time PT	在偏置功率范围300 us to 400ms Within bias power range 300us to 400ms	1us	(晶体Crystal)
延时 Delay Time DT	10 to 999 us	1us	±1 us（晶体Crystal)
上限/下限 Upper Limit/ Lower Limit	0 to 9999 mV	1mV	N/A
	0 to 999.9 mV	0.1mV	N/A
VCB/VDS	1 to 100 V	1V	±(0.2%+0.1V)

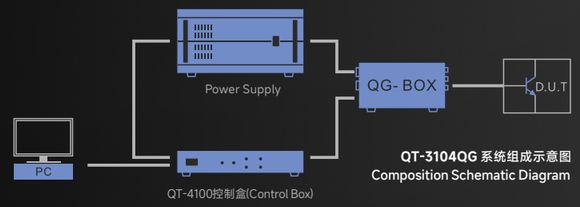
※最大电流，最高电压视机型而定。最大电流分别有20A，50A;最大电压分别有100V，200V。
※对于所有技术参数本公司有权随时修订，不作另行通知。
※Maximum current and voltage depend on the machine model. Maximum current options are 20A, 50A; maximum voltage options are 100V, 200V.
※ PowerTECH Co.,Ltd. reserves the right to revise all technical parameters at any time without prior notice.

QG 模组(Module) QT- 3104QG

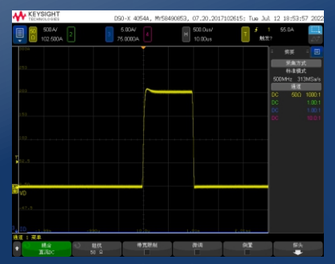
常规MOSET、SIC动态参数QG测试。满足微小电荷量高频器件QG、QGD、QGS参数测试。

Conventional MOSFET, SiC dynamic parameter QG testing. Meets the testing requirements for small charge high-frequency devices including QG, QGD, and QGS parameters.

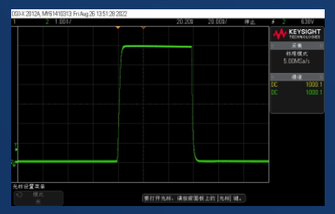
技术参数 Technical parameters	测试参数 Test parameters	Q G: 0.1nC-10uC 3%±0.1nC
		QGD: 0.1nC-10uC 3%±0.1nC
		QGS1: 0.1nC-10uC 3%+0.1nC
		QGS2: 0.1nC-10uC 3%+0.1nC
		VG(th): 1~20V 1%±0.1V
	测试限度 Test Limit	V G: 1~20V 1%±0.1V
		VDD: 5~150V 1%±0.5V
		I D: 10~200A 1%±0.5A



QT-3104QG 系统组成示意图
Composition Schematic Diagram



2000A 波形图（Waveform）



6000V 波形图（Waveform）

高电压大电流模组
High Voltage Module
High Current Module

HVM6000V-8000V
HCM2000A

支持外挂QT-4100、QT-8100测试系统,也可独立工作。

Support sexternal connection to QT-4100, QT-8100 testing systems, and can also operate independently

- **2000A模组参数**

电压测量(Voltage Measurement)： ± 30V
电流测量(Current Measurement)： ± 2000A

- **6000V/8000V模组参数**

电压测量(Voltage Measurement)： 1000~6000V/8000V
电流测量(Current Measurement)： 1nA~20mA
电压输出(Voltage Output)： 1000~6000V/8000V
电压测量(Current Output)： 1~20mA

分立器件高速测试系统
High Speed Discrete Test System

QT- 6000

QT- 6000 测试系统适用于测量中小功率三极管、场效应管、二极管等产品，可扩展内置高精度电容测试(DC+CAP)、可控硅、Scanbox等。

QT-6000 test system is designed to provide high speed measurement solution to small signal devices such as MOS, Diodes and other similar products. It can add-on built-in high precision capacitance feature, SCR, scanbox, etc.

双乒乓并行100%复测模式
Dual ping pong parallel 100% retest mode

主要技术指标 Key Technical Parameters

测量精度 Measurement Accuracy	电流 (Current): 0.5%+ 0.05%量程 (of the range) + 1.5nA 电压 (Voltage): 0.5% + 0.05%量程 (of the range) + 1.5mV 电容 (Capacitance): 0.5% + 0.05%量程 (of the range) + 10fF
量程选择 Range Selection	电流 (Current): 30A/3A/300mA/30mA/3mA/300uA/30uA/3uA/300nA/30nA 电压 (Voltage): 1200V/600V/300V/30V/3V/300mV/30mV 电容 (Capacitance): 300pF/30pF/3pF (BIAS电压范围0~80V)
	选配(Optional): 1、VC测量 VC measurement 2、pA测量 pA measurement
分辨率 Resolution	16 bit ADC/DAC
波形记录 Waveform Recording	波形捕获100K/1M/10M可选，采样深度1024KB Waveform capture options: 100K/1M/10M selectable; Sampling depth: 1024KB

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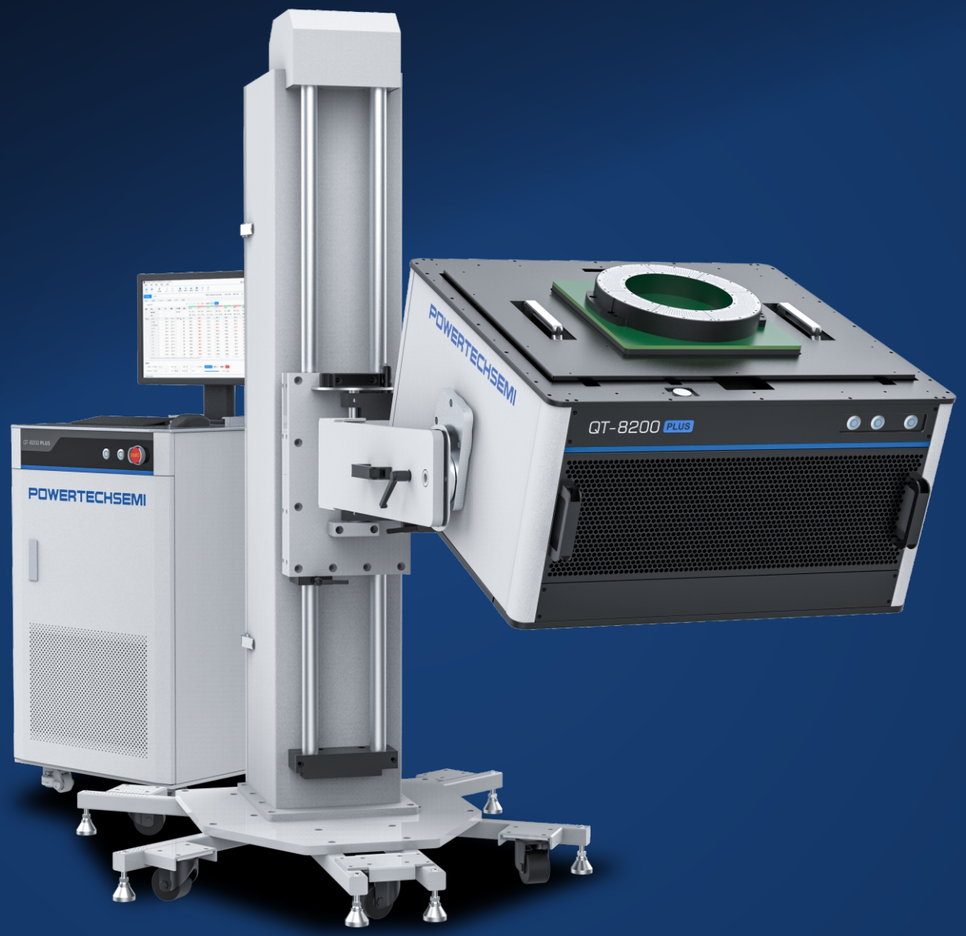
主要特点 Key Features

- 高速测试满足UPH56K以上的分选机
- 快速测试pA级漏电流，测量精度1pA
- 内置多路示波器功能
- 具备校准和自检功能
- 采用四象限电路，可以很好的保护被测器件
- 采用悬浮电源和全对称结构

- High-speed testing meets the requirements for a sorting machine with a throughput of 56K units per hour or more
- Fast testing of pA-level leakage current with a measurement accuracy of 1 pA
- Built in multi-channel oscilloscope function
- Equipped with calibration and self-test functions
- Uses a four-quadrant circuit to effectively protect the tested devices
- Adopts a floating power supply and a fully symmetrical structure

数模混合IC测试系统
Mixed Signal IC Test System

QT- 8200 PLUS (Hard Docking)



QT- 8200 PLUS 系列应用范围

数模混合IC Analog Digital Mixed IC	LED驱动 LED Driver	消费电子 Consumer Electronics
存储、微处理器 Memory、Microprocessor	电源管理 Power Management	通信及接口类 Communication and Interface

主要特点 Key Features

- 模拟、数字、混合芯片测试系统
- 51.2 MHz
- 128 个数字通道
- 64 sites 并行测试
- 64M 向量存储器，支持子命令
- 最小脉宽 9.765ns
- 编程语言Visual Studio C++
- V/I独立设计,内置AWG测试速度更快
- 悬浮电源设计
- 操作系统Windows
- DPU 内置TMU、PMU
- 限压限流模式，四象限，内置示波器
- 高压通道: 1000V/30mA
- 最小时间测量 2ns

- Analog, digital, mixed signal IC test system
- 51.2 MHz clock rate
- 128 digital channels
- 64 parallel test sites
- 64M vector memory, support sub-commands
- Minimum pulse width of 9.765ns
- Programming language: Visual Studio C++
- Independent V/I design, built-in AWG for faster testing
- Floating power supply design
- Windows Operating System
- DPU with built-in TMU, PMU
- Over voltage/Over current protection, Four-Quadrants and Built-in Oscilloscope
- High voltage channel: 1000V/30mA
- Minimum time measurement of 2ns

详细技术指标 Technical Specifications

模拟板卡主要技术指标 Key Technical Specifications of Analog Boards (Analog)

Name	Voltage/Current	Channel Count	Accuracy	Digitizer	AWG
FAPU8-50	± 50V/1A	8	0.025%/0.05%	200Ksps	200Ksps
FAPU16-30	± 30V/1A	16	0.025%/0.05%	200Ksps	200Ksps
FAPU32	-2V to +18V/500mA	32	0.025%/0.05%	100Ksps	100Ksps
PVI1000	-300V to 1000V/30mA	2	0.25%	200Ksps	200Ksps
PVC120-10	± 120V/10A	2	0.1%	200Ksps	200Ksps
PMS4	PMU 0.5V~200V	4	0.005%	2Msps(18bit) 25Msps(12bit)	2Msps(18bit) 25Msps(12bit)
	TMU	4	0.5%	N/A	N/A
	PPSU ±10V, 10mA	4	±2V 25Msps(12bit)		
			±10V 2Msps(18bit)		
			Sine 10V THD: -70dB 1KHz~10KHz(18bit)		
	DSP	4	FFT, Average, Vrms		

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数字板卡主要技术指标 Key Technical Specifications of Digital Boards(Digital)

Name	(PPMU) Output Measurement	Channel Count	Output Accuracy	Max. Rate	TMU Min. Accuracy	Pattern Memory
DPU32	-2V to +7V	32	0.1%	51.2MHz	1.5ns	64M
Built-in TMU	Resolution: 50ps, Measurement Range: 2ns~40s					
Data Format	RZ NR RO NF KT KN, Max 256 wave STIL					

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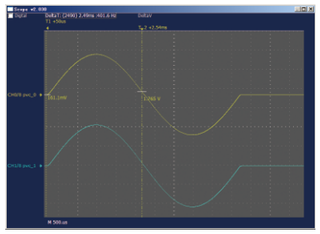
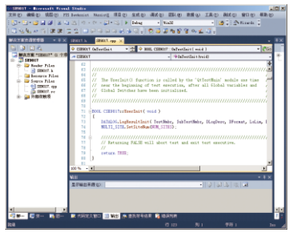
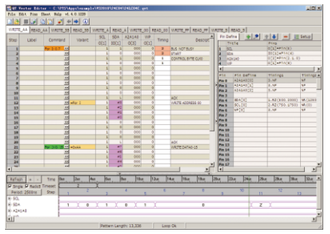


PVC板卡示波器
PVC Board Oscilloscope



测试程序编辑界面
Test Programming Interface



矢量编辑器界面
Vector Editor Interface

RF 测试模组
RF Module

QT- RF6G

- **RF6G模块提供丰富广泛的功能测试，是RF测试设备性价比最佳的选择。**

  The RF6G module provides wide range of test coverage, and it is the best cost-effective choice of RF test equipment available in the market.

- **测试项目 Test Items：**

  大功率输出、谐波测试、开关时间、插损、隔离、S11、Ron、Coff、同端回路、IP3、杂散。

  High power output, harmonic test, switching time, insertion loss, isolation, S11, Ron, Coff, same-endloop, IP3, etc.

- **为低成本产品设计**
  Designed for Low-cost Products

  · LNA

  · TUNER

  · RF 开关 Switch

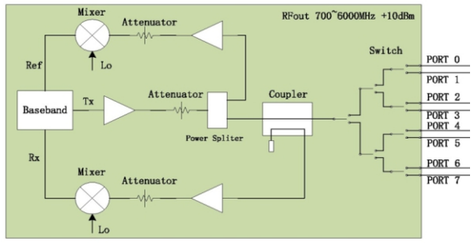
  · 滤波器 Filter

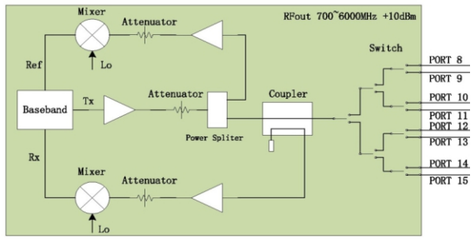
  · 等无源器件 Other Passive Components

- **主要特点 Key Features**

  - DC、数字、RF 一体化机台
  - 数字满足 MIPI 50MHz 以上测试
  - 多种复合测试项全流程测试
  - 支持矢量和标量测试
  - 大功率 40dBm
  - 大功率复合测试 4 in & 4 out
  - 自研算法通信 UPH 较高
  - 支持多 sites 复合测试

  - DC, digital, RF integrated machine
  - Digital meet MIPI 50MHz and above testing
  - Full-process testing of multi-composite test items
  - Supports vector and scalar testing
  - 40dBm High power
  - 4 in & 4 out High power composite testing
  - Self-developed algorithm communication UPH is higher
  - Support multi-site composite testing



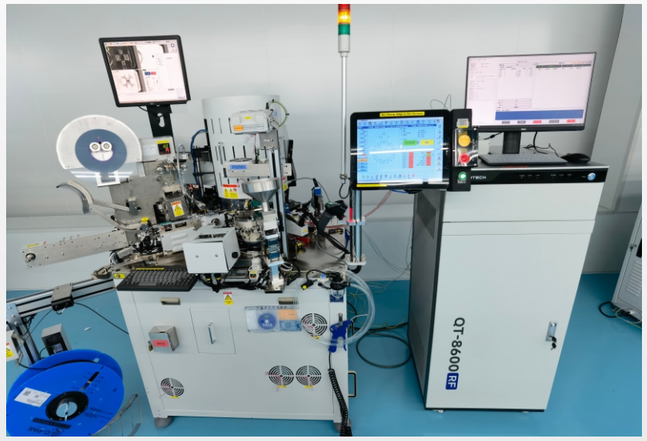


RF6G Module

- **主要技术指标 Key Technical Parameters**

  - 16 RF端口(8 in/8 out)
  - 支持 2 sites RF并行测试
  - 每通道具有12bit的 ADC/DAC能力
  - 100MHz~6GHz RF标准源输出和测量
  - 测试模组形式，配合QT-8000系列测试
  - 每通道提供 0.1dB的功率步进和0.1Hz的频率步进

  - 16 RF ports (8 in/8 out)
  - Support 2 RF parallel test sites
  - 12-bit ADC/DAC in each individual channel
  - 100 MHz~6GHz RF standard output source and measurement
  - Test module is designed to pair with QT- 8000 series tester
  - Each channel provides 0.1dB power step and 0.1Hz frequency step



现场应用 Field Application

· 成本低，尺寸小，集成度高
· Low Cost, Small Size, High Integration

数模混合IC测试系统
Mixed Signal IC Test System
QT- 8100 (Cable Mount)

QT-8100 IC测试系统适用于常规DC、AC参数测试和IC器件功能性测试
QT-8100 IC test system is suitable for regular DC, Ac parameter testing and IC device performance testing

主要测试：电源管理类；数码消费类通信接口类；汽车、节能环保电子类标准线性电路;存储器，处理器芯片特殊专用或定制类IC以及晶圆测试。

Main application: power management; digital consumer products, communication interfaces; automotive, energy-saving and environmentally friendly electronics; standard linear circuits; memory, processor IC; special or customized IC and wafer testing.

主要特点 Key Features

- 模拟、数字、混合芯片测试系统
- 系统采用悬浮电源设计
- 板卡支持限压限流输出，波形显示功能及内置AWG
- 测试通道多达600+，可实现8、16、32等多工位并行测试
- 完成一般测试项的时间，比传统机型减少30~50%以上
- 支持RF扩展

- Analog, digital, and mixed signal IC test systems
- The system adopts floating power supply design
- Board supports overvoltage/overcurrent protectiont, waveform displayand built-in AWG
- Up to 600+ test channels and 8/16/32 parallel test sites
- Significantly reduced test time (30%~50% less than traditional models)
- Support RF extension

详细技术指标 Technical Specifications

数字部分指标 Technical Specifications of Digital Part (Digital)

Available Boards	16/32 Channel
Maximum Test Frequency	100MHz/51.2MHz
Minimum Impulse Width	3.25ns/9.765ns
Pattern Memory	8Meg/64Meg
Maximum I/O Channel	256
Time Measurement Unit(TMU)	50ps
Offset & Comparision Voltage Rahge	-1.5V to+6.5V/-2V to+7V
Data Format	RZ, NRZ, RTO, NF, SBC, Max 256 wave STIL Compatible

模拟板卡主要技术指标 Main Technicalspecifications of Analog Boards (Analog)

Name	Voltage/Current	Channel Count	Accuracy	Digitizer	AWG
APU8-50	± 50V/1A	8	0.025%/0.05%	200Ksps	200Ksps
APU8-100	± 100V/500mA	8	0.25%/0.25%	100Ksps	100Ksps
APU16-30	± 30V/200mA	16	0.025%/0.05%	200Ksps	200Ksps
FAPU32	-2V to +18V/500mA	32	0.025%/0.05%	100Ksps	100Ksps
PVI1000	- 300V to 1000V/30mA	2	0.25%	200Ksps	200Ksps
PVC40-20	± 40V/20A	2	0.1%	200Ksps	200Ksps
PVC120-10	± 120V/10A	2	0.1%	200Ksps	200Ksps
PMS4	PMU 0.5V~200V	4	0.005%	2Msps(18bit) 25Msps(12bit)	2Msps(18bit) 25Msps(12bit)
	TMU	4	0.5%	N/A	N/A
	PPSU ±10V, 10mA	4	±2V 25Msps(12bit)		
			±10V 2Msps(18bit)		
			Sine 10V THD: -70dB 1KHz~10KHz(18bit)		
	DSP	4	FFT, Average, Vrms		

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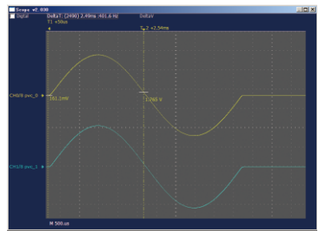
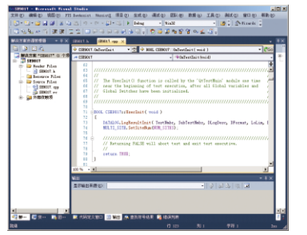
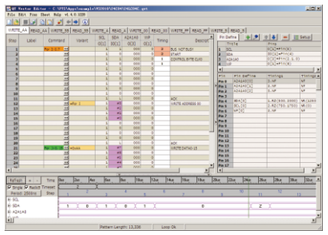


PVC板卡示波器
PVC Board Oscilloscope



测试程序编辑界面
Test Programming Interface

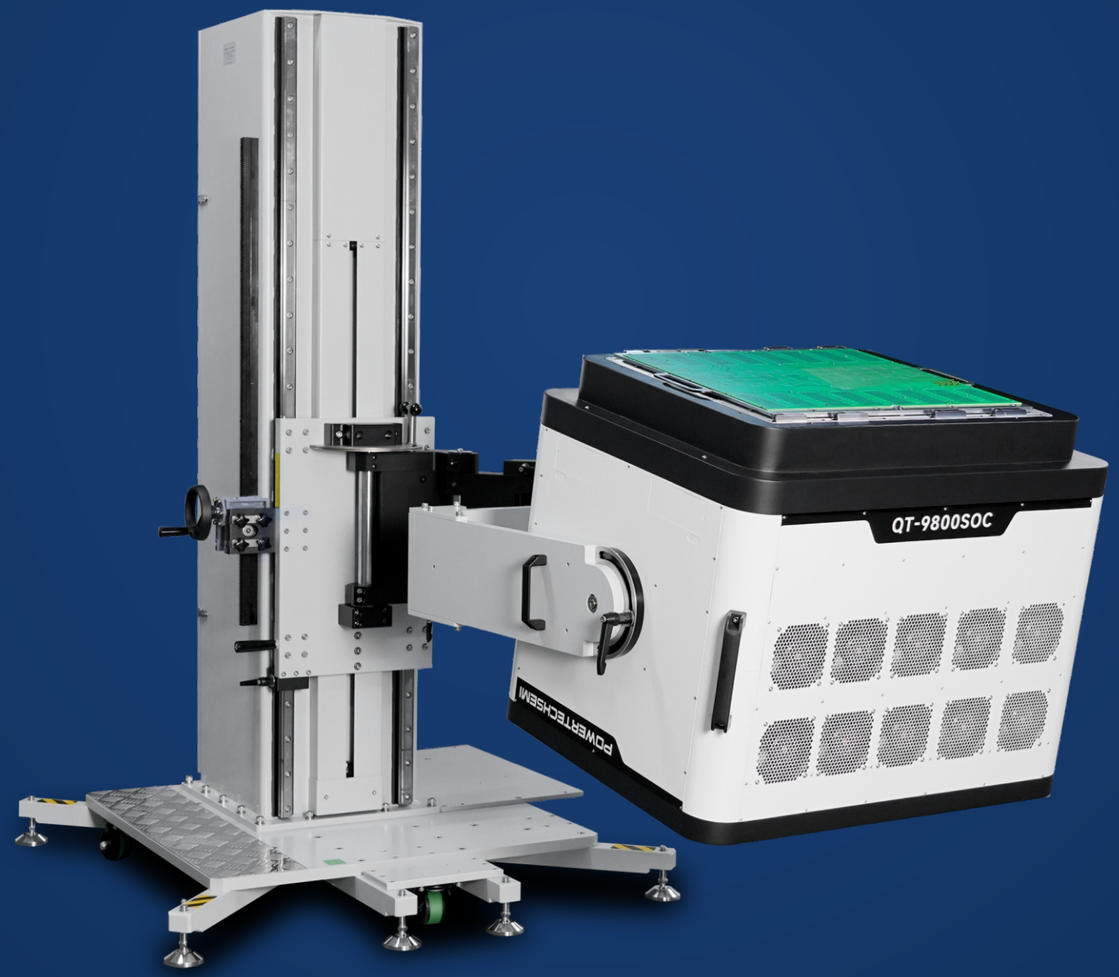


矢量编辑器界面
Vector Editor Interface

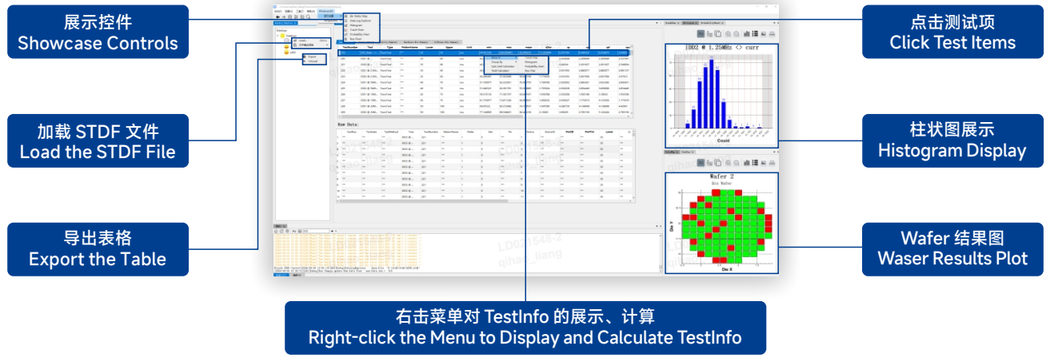
SoC测试系统
SoC (System On Chip) Test System

QT- 9800

- **应用范围 Application Range:**
  MCU, CPU, DSP, FPGA, 图像传感器(Image sensors)



- **丰富的软件工具 Software Tools**



- **主要特点 Key Features**

- 支持1920个IO通道
- 800Mbps的向量速率
- 512M的向量存储深度
- 集成时间测量单元
- 数字源板电流可并联输出
- 兼容93K DUT接口
- 基于C++的语言编程
- 支持1024 sites
- 脉宽边沿调节精度可达ps级

- Supports 1920 IO channels
- 800Mbps vector rate
- 512 Meg Per pin vector memory
- Integrated time measure unit
- The digital source board current can be output in parallel
- Compatible with 93K DUT interface
- C++ based programming language programming
- Support up to 1024 sites
- Pulse width edge adjustment accuracy up to pico-seconds (ps)

板卡主要技术指标 Main Technical Specifications of Boards

Name	Voltage/Current	Channel Count	Note
DPU128	-1.5V~6.5V/25mA	128	Max rate: 800Msps Pattern memory: 512M
DPS64	± 12V/1.2A	64	76.8A Per board in gang mode
SMU	± 50V/2A	8	N/A

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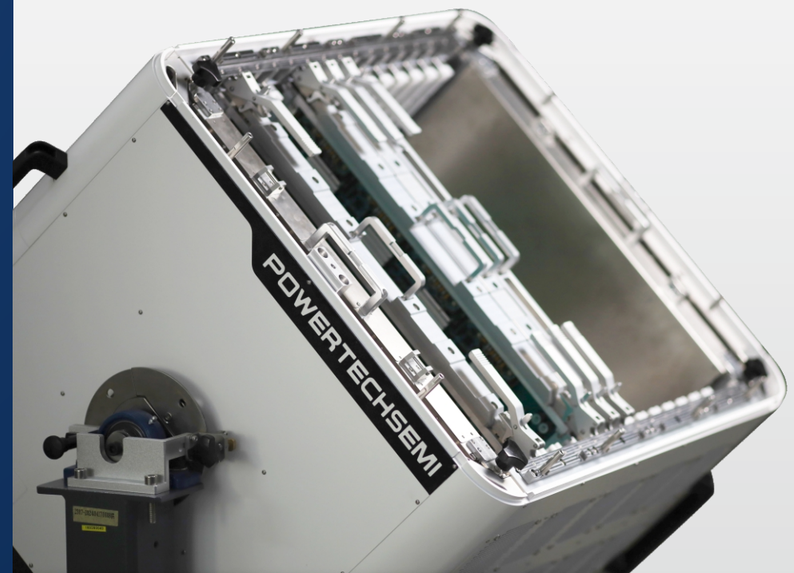
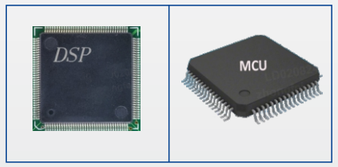
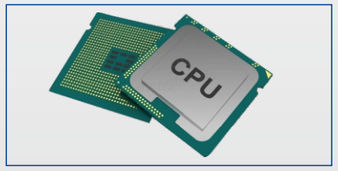


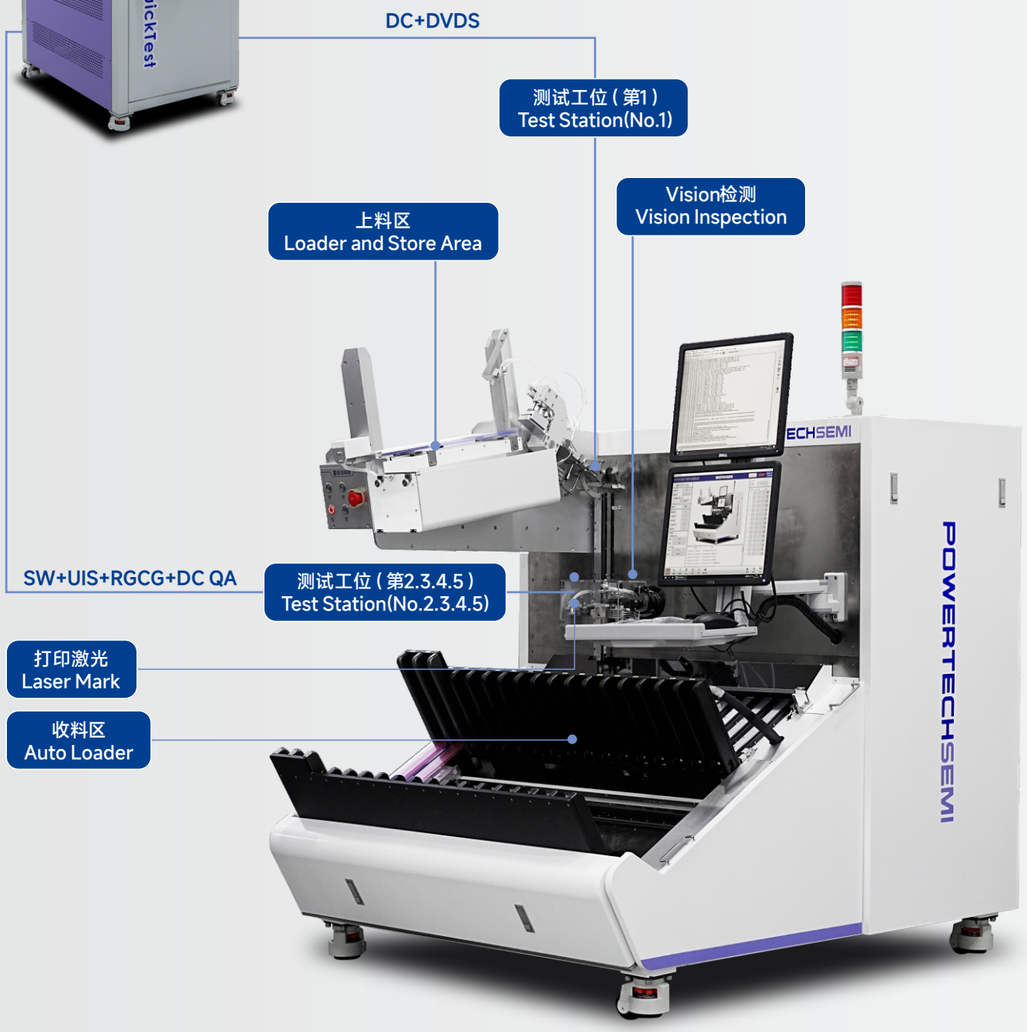




重力式测试分选系统
Automated IC Marking Inspection System
QT- 4100+QH- GT2100AH

GT2100AH (常高温)：支持3测试工位，选配二维码读取功能
GT2100 (常温)：支持5测试工位，选配二维码读取、打标、印字检测功能
提供整套成熟测试方案

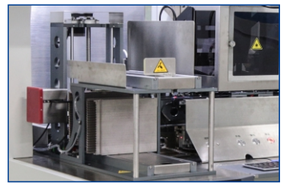
GT2100AH (Ambient/Hot temperature):
Supports 3 test sites, QR code reading function is optional
GT2100 (Ambient temperature):
Supports 5 test sites, QR code reading, marking and mark inspection functions are optional, provid a total test solution



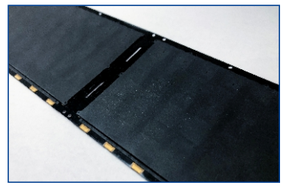
全自动IC打印检测系统
Automated IC Marking Inspection System
QH-APV100SL Series

- 适用槽式弹匣(Slot Magazine)
- 双层式上下料
- 自动兼容各常用尺寸弹匣
- 轨道自动调整
- 进料视觉防错
- 打印双向定位
- 辅助弯曲平整
- 自动调整焦距
- NG自动剔除
- 自动变码、生成二维码
- 印字检测、二维码读取

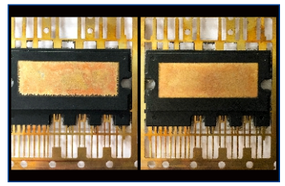
- Designed for use with slot magazines
- Features automatic loading and unloading
- Automatically compatible with magazines
- Automatically track width adjustment
- Track adjustment is automatic
- Vision error prevention input picker
- Assisted bending and flattening
- Automatic focus adjustment
- Automatically rejects any NG parts
- Automatic serial number and generation of 2D codes
- Can perform marking inspection and 2D code reading



双层式上下料
Features Automatic
Loadingand Unloading



QFN塑封料片
QFN Plastic
Encapsulation Material Sheet

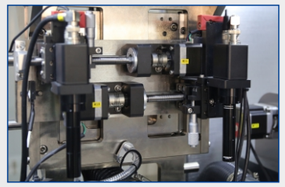


去溢料效果
Overflow Material
Removal Effect

高质量印字
High Quality Marking

全自动IC打印检测系统
Automated IC Marking Inspection System
QH-APV100SL Series

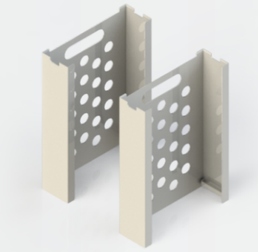
- 适用堆叠式弹匣(Stack Magazine)
- 全自动上下料
- 自动兼容弹匣
- 进料视觉防错
- 打印视觉定位
- 辅助弯曲平整
- 自动调整焦距
- NG自动剔除
- 自动变码、生成二维码
- 印字检测、二维码读取



双相机视觉定位
Dual Camera Vision Positioning

自动调整焦距
Automatic Focus Adjustment

- Designed for use with stack magazines
- Features automatic loading and unloading
- Automatically compatible with magazines
- Track adjustment is automatic
- Vision error prevention input picker
- Assisted bending and flattening
- Automatic focus adjustment
- Automatically rejects any NG parts
- Automatic serial number and generation of 2D codes
- Can perform marking inspection and 2D code reading



兼容多种封装
Compatible With Various Frames

高精度印字
High Marking Precision

视觉进料防错
Quick View System

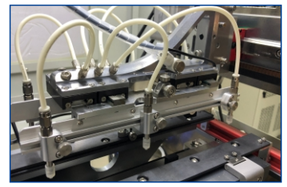
多样的打印方式
Mutiple Marking Method

更大打印范围
Greater Marking Range

高质量印字
High Marking Quality

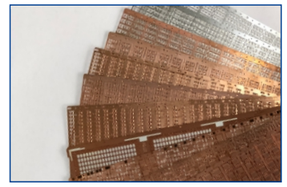
全自动IC打印检测系统
Automated IC Marking Inspection System
QH-APV300LF

- 定制提篮储料(Cassette)
- 自动隔纸取放
- 轨道自动调整
- 进料视觉防错
- 打印双向定位
- 辅助弯曲平整
- 自动调整焦距
- NG自动剔除
- 自动变码、生成二维码
- 印字检测、二维码读取



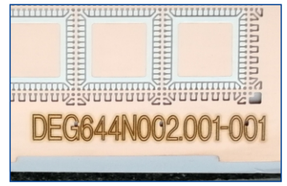
吸盘快速调整
Quick Adjustment Suction Cup

- Customized Basket Material Storage(Cassette)
- Automatic paper separation and placement
- Automatically compatible with magazines
- Track adjustment is automatic
- Vision error prevention input picker
- Assisted bending and flattening
- Automatic focus adjustment.
- Automatically rejects any NG parts
- Automatic serial number and generation of 2D codes
- Can perform marking inspection and 2D code reading



兼容多种框架
Compatible with
Multiple Framework

打印二维码
Marking QR Code

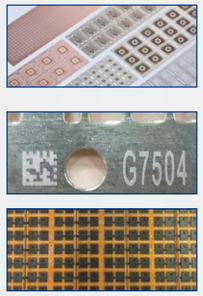


打印序列号
Marking Serial Number

双进式全自动打印检测系统
Dual-input Fully Automated Marking Inspection System
QH-APV100ST(SL)

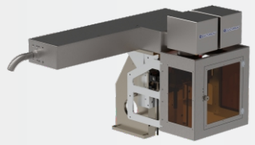
- 适用堆叠式和槽式两种弹匣
- 推式取料和真空吸盘取放式
- 双模式自动上下料机构
- 轨道自动调整
- 进料视觉防错
- 打印视觉定位
- 辅助弯曲平整
- 自动调整焦距
- NG自动剔除
- 自动变码、生成二维码
- 印字检测、二维码读取

- Suitable for both stack and slot-type magazines
- Pick-and-place extraction and vacuum suction placement
- Dual-mode automatic loading and unloading mechanism
- Automatic track adjustment
- Vision error prevention input picker
- Printing visual alignment
- Assisted bending and flattening
- Automatic focus adjustment
- Automatically rejects any NG parts
- Automatic serial number and generation of 2D codes
- Can perform marking inspection and 2D code reading

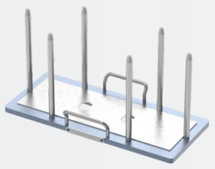


高质量印字
High Quality Marking

双500W像素相机印字检测
Dual500WPixel Camera Marking Inspection



双头激光打标
Dual-Head Laser Marking



托盘式全自动打印检测系统
Tray-Type Fully Automated Marking System
QH-APV136T(C)

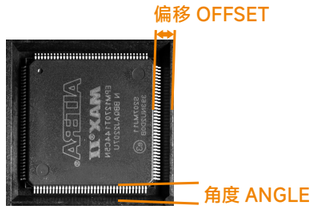
- 适用于半导体IC tray盘系列产品打标
- 自动上下料机构
- 轨道自动调整
- 卡料、叠料、进料方向防呆功能
- 定位偏移打印
- 自动调整焦距
- NG自动剔除、补齐
- 自动变码、生成二维码
- 印字检测、二维码读取

- Suitable for marking semiconductor IC tray series products
- Automatic loading and unloading mechanism
- Automatic track adjustment
- Anti-jamming, stacking, and feed direction prevention functions
- Offset printing with positioning
- Automatic focus adjustment
- NG(Non-Good)automatic rejection and replenishment
- Automatic serial number and generation of 2D codes
- Can perform marking inspection and 2D code reading

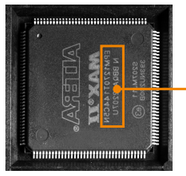
环氧树脂单线条打标效果
Marking Effect of Epoxy Resin Single Line

环养树脂填充打标效果
Marking Effect of Epoxy Resin Filling

金属表面打标效果
Marking Effecton Metal



偏移定位
Offset Positioning



打印后视觉检测
Visual Inspection After Marking

1、2D可读内容是否正确
2、印字内容是否正确
3、文字是否缺划
4、文字是否偏移

1、Is the 2D-readable content correct
2、Is the printed content correct
3、Are there missing strokes in the text
4、Is the text offset

SMD激光打标机 Laser Marking Machine

专业配合高速分立器件全自动测试分选机，激光打印适合各种SMD器件系列，如SOT23、SOT89、SOT323、QFN系列、SOD523、SOD723、SOD923、TSOP、SSOP等贴片的激光打印。

Specially designed to cooperate with high-speed automatic testing and sorting machines for discrete devices, laser printing is suitable for various SMD device series, such as SOT23, SOT89, SOT323, QFN series, SOD523, SOD723, SOD923, TSOP, SSOP, and other surface. mount devices.

主要特点 Key Features

- 不同的结构可适用于各类Handler
- 一体化整机结构紧凑、体积小巧，抗干扰性强，稳定性高，寿命长
- 软件控制系统和机械工作系统自主开发，确保整个系统的稳定性兼容性，便于客户升级
- 可根据客户的实际需求，选用脱机运行操控技术，编辑印章，操作直观性强，具有联机操作管理功能

- Different structures can be adapted to various types of Handlers
- Integrated whole-machine structure, compact size, strong anti-interference ability, high stability, and long lifespan
- Independently developed software control system and mechanical working system ensure the stability and compatibility of the entire system, facilitating customer up grades
- Depending on the customer's actual needs, offline operation control technology can be selected. Editing stamps and operation are intuitive, with online operation management functionality

主要技术指标 Key Technical Parameters

Fiber

激光中心波长 (Laser Center Wavelength)	1064nm
激光输出功率 (Laser Output Power)	5/10/20W 等可选(Option)
打标范围 (Marking Range)	50x50mm, 70x70mm, 100x100mm 等可选(Option)
最小打印线宽 (Minimum Marking Line Width)	0.022mm
最小字高 (Minimum Word Height)	0.22mm
打标频率 (Marking Frequency)	20~80KHz
输入电源 (Input Power Supply)	220V±10%/50Hz
适应封装器件 (Adaptation to Encapsulated Devices)	各种半导体分立器件及IC Various semiconductor discrete devices and IC

CO_2

激光中心波长 (Laser Center Wavelength)	10640nm
激光输出功率 (Laser Output Power)	10/30/60W 等可选(Option)
打标范围 (Marking Range)	35x35mm, 50x50mm, 70x70mm 等可选(Option)
最小打印线宽 (Minimum Marking Line Width)	0.06mm
最小字高 (Minimum Word Height)	0.5mm
输入电源 (Input Power Supply)	220V±10%/50Hz
适应封装器件 (Adaptation to Encapsulated Devices)	各种半导体分立器件及IC Various semiconductor discrete devices and IC

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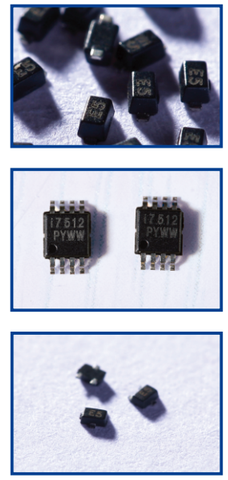


适用产品示例
Applicable Product Examples

独立开发的 QuickMark 打标系统专用软件及相关硬件设备
性能卓越稳定，是目前打标速度最快、运营成本最低的激光打标设备

Independently developed QuickMark marking system specific software and related hardware devices, with out standing and stable performance, are currently the fastest laser marking equipment in terms of marking speed and the lowest operating cost

双头激光打标机
Dual-Head Laser Marking Machine

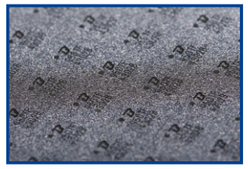
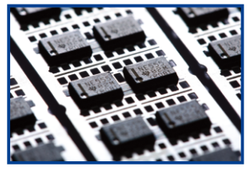
双头激光打标机主要配合全自动IC机械手使用采用高速振镜扫描系统，精度高，性能稳定极大提高IC产品打印的生产效率。

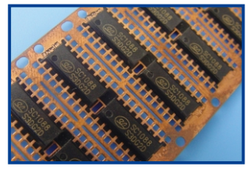
The dual-head laser marking machine is mainly used in conjunction with a fully automatic IC robotic arm. It adopts a high-speed galvanometer scanning system, providing high precision and stable performance, greatly improving the production efficiency of IC product marking.

主要特点 Key Features

- 支持流水号变码左右头切换打印
- 支持动态二维码变码打印
- 支持maping地图下载打印
- 适应性强，可适用金属和非金属等各种材料，打标范围大、一致性好
- 整机打印速度快，主要应用于整片式IC及分立器件
- 可以通过单颗或整体调整校正阵列精度、控制料条的标记精度
- 采用风冷方式冷却，长时间免维护运行，稳定性好，使用寿命长

- Supports switching between left and right laser heads for serial number variable code printing
- Supports dynamic QR code variable code printing
- Supports mapping map download printing
- Strong adaptability, suitable for various materials including metal and non-metal. Large marking range and good consistency
- High-speed printing, mainly used for entire IC and discrete devices
- Precision adjustment can be made individually or collectively to control the marking accuracy of the strip
- Uses air cooling for maintenance-free, stable, and long-lasting operation



主要技术指标 Key Technical Parameters

激光中心波长 (Laser Center Wavelength)	1064nm
激光输出功率 (Laser Output Power)	20/30/60W
打标范围 (Marking Range)	300x160mm
最小打印线框 (Minimum Printing Line Width)	≈0.05mm
最小字高 (Minimum Character Height)	≈0.5mm
打标频率(Marking Frequency)	20~200KHz
輸入电源(Input Power Supply)	200V±10%/50Hz
适应封装器件 (Adaptation to Encapsulated Devices)	各种IC集成器件 Various IC integrated devices

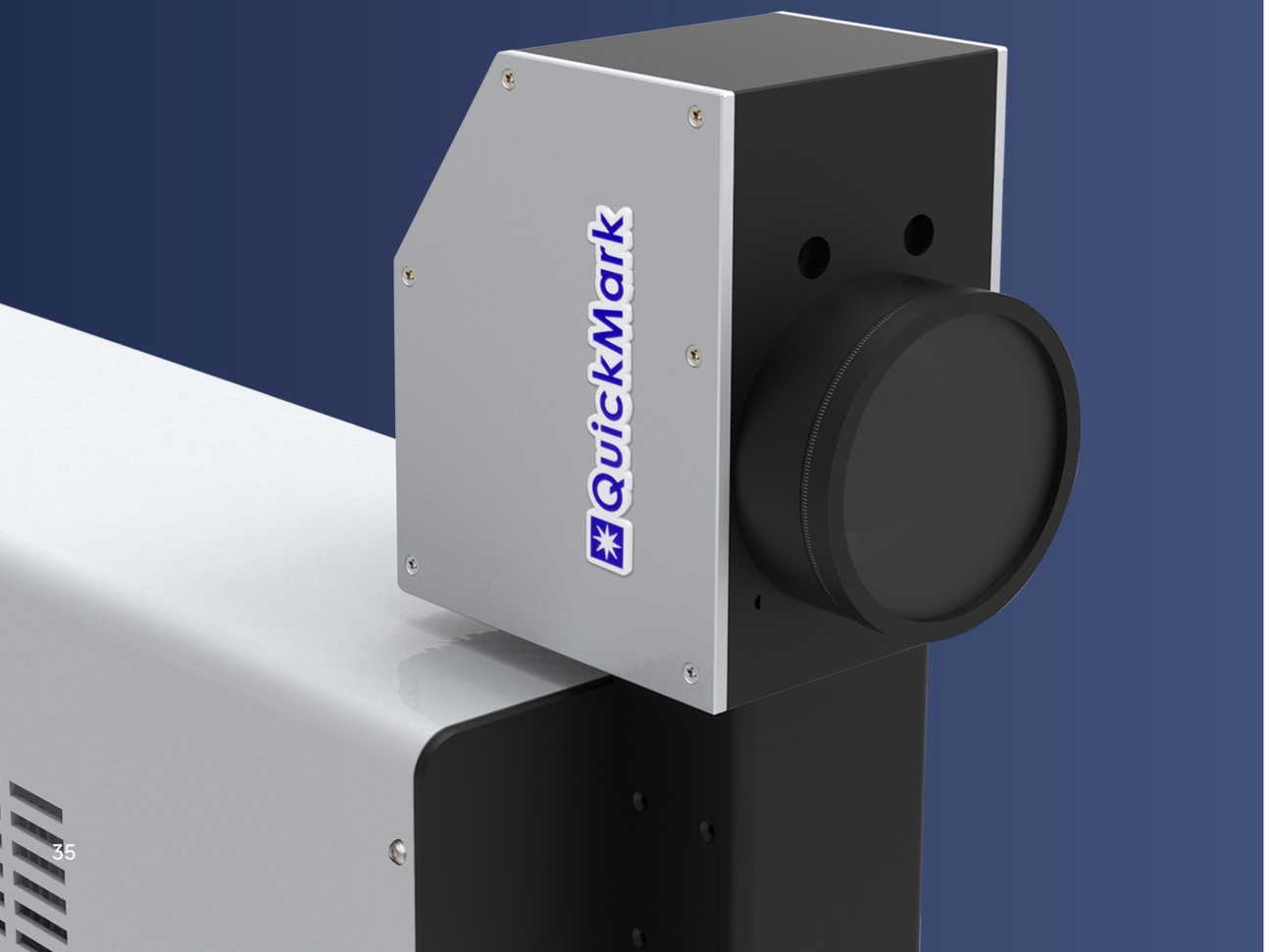
紫外/绿光脉冲分体式激光打标机
UV/Green Pulse Detachable Laser Marking Machine

紫外/绿光激光打标机采用国际先进谐振腔设计及激光控制技术实现激光器在高功率运转下能够获得优秀的光束质量，较高的长期工作稳定性，较窄的激光脉冲宽度。

The UV/Green laser marking machine adopts international advanced resonator design and laser control technology, achieving excellent beam quality and high long-term stability under high-power operation.
lt has a narrow laser pulse width.

- **电光转换效率高**
- **使用寿命长激光光斑输出极小，光模式好**
- **激光输出功率极稳定**
- **冷加工概念**

- High electro-optical conversion efficiency and long service life
- Extremely small laser spot output with a good light mode
- Extremely stable laser output power
- Cold processing concept

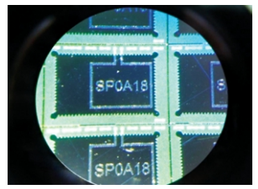


产品应用介绍 Product Application Introduction

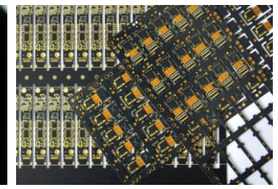
绿光 Green light 5/10/15W | 紫外 Ultraviolet light 3/5/7W

1.激光打标
2.激光调阻
3.薄膜光伏电池制造
4.微加工处理
5.PCB、FPC分板、切割、钻孔
6.陶瓷、硅片划线
7.晶圆产品打标、切割
8.LED蓝宝石衬底基板
9.PVC、ABS的材料刻印切割
10.IC器件、塑封金属框架刻印

1. Laser Marking
2. Laser Resistance Adjustment
3. Thin Film Photovoltaic Cell Manufacturing
4. Micro Processing
5. PCB, FPC Separation, Cutting, Drilling
6. Ceramics, Silicon Wafer Scribing
7. Wafer Product Marking, Cutting
8. LED Sapphire Substrate
9. Engraving and Cutting of PVC, ABS Materials
10. IC Device, Encapsulated Metal Frame Engraving



晶圆打标
Wafer Marking



PCB, FPC板切割
PCB, FPC Cutting

绿光主要技术指标 Green Light Key TechnicalSpecifications

激光中心波长 (Laser Center Wavelength)	532nm
激光输出功率 (Laser Output Power)	5/10/15W
打标范围 (Marking Range)	70mmx70mm等可选 (Option)
最小字高约 (Minimum Character Height)	0.12mm
工作频率 (Working Frequency)	30~100KHz
重复精度(Repeat Accuracy)	±0.003mm
激光输出稳定度(Laser Output Stability)	< 2%(8H)
光束质量 (Beam Quality (M2))	M2 < 1.2
冷却方式 (Cooling Method)	风冷/水冷 (Air Cooling/Liquid Cooling)

紫外主要技术指标 UV(Ultraviolet)Key Technical Specifications

激光中心波长 (Laser Center Wavelength)	335nm
激光输出功率 (Laser Output Power)	3/5/7W
打标范围 (Marking Range)	70mmx70mm等可选(Option)
最小字高约 (Minimum Character Height)	0.12mm
工作频率 (Working Frequency)	30~100KHz
重复精度(Repeat Accuracy)	±0.003mm
激光输出稳定度(Laser Output Stability)	< 2%(8h)
光束质量 (Beam Quality (M2))	M2 < 1.2

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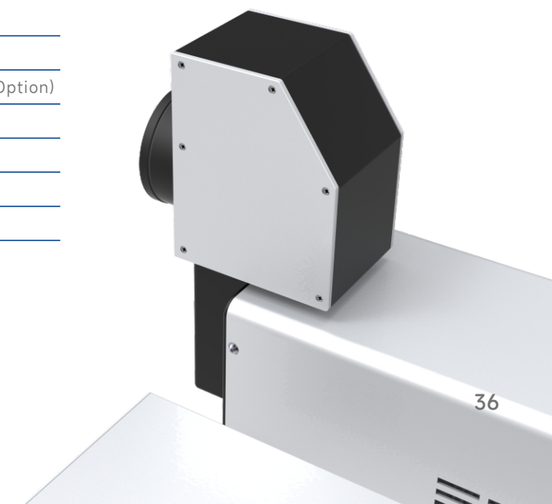

视像定位激光打标机
Vision-Guided Laser Marking Machine

Vision高精度单颗打标或去溢料，主要配合全自动分选机使用。
采用高速振镜扫描系统，打标精度高，性能稳定，极大提高产品激光打印的生产效率。

Vision-guided laser marking machine for high-precision single-point marking or deburring, primarily designed to work with fully automatic sorting machines. It utilizes a high-speed scanning system with high marking accuracy, ensuring stable performance and significantly enhancing the production efficiency of laser-printed products.

主要特点 Key Features

- 采用非接触式Vision视觉检测系统，快速确定器件的位置坐标，同步将信息发送到激光打标系统
- 根据Vision检测的坐标信息，系统把打标内容调整到相应位置进行刻印，极大地提高了产品的打印精度
- Vision、打标的软/硬件源于PowerTECH：其兼容性高，可根据客户的要求设计成嵌入式一体化、分体式结构

- Utilizes a non-contact Vision inspection system to quickly determine the position coordinates of the device and synchronously send the information to the laser marking system
- Based on the coordinates detected by Vision, the system adjusts the marking content to the corresponding position for engraving, greatly improving the printing accuracy of the product
- Vision and marking software/hardware are derived from PowerTech; it has high compatibility and can be designed according to customer requirements as an embedded integrated or split system

主要技术指标 Key Technical Parameters

激光系统 (Laser System)	连续/脉冲Fiber光纤激光器(激光类型可选) Continuous/Pulsed Fiber Laser (Laser type optional)
激光波长 (Laser Wavelength)	1064±10nm
功率 (Power)	5W/10W/20W
电源 (Power Supply)	220V AC 50~60Hz
最小线宽(Minimum Line Width)	0.022mm
最小字高约(Minimum Font Height)	0.22mm
UPH(UPH (Units Per Hour))	50K(具体视打印内容 Depend on print content)
X、Y方向偏移量精度(X,Y Direction Offset Accuracy)	≤0.05mm
角度便宜精度(Angular Offset Accuracy)	< 4°

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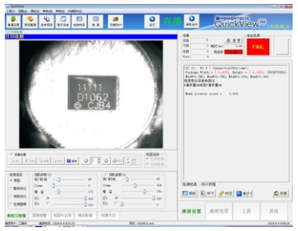


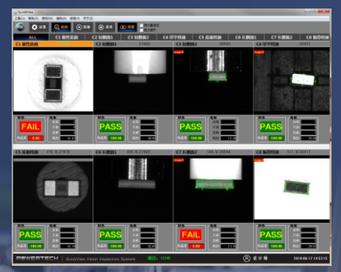
视觉检测系统 Vision Inspection System

QV-1000Series

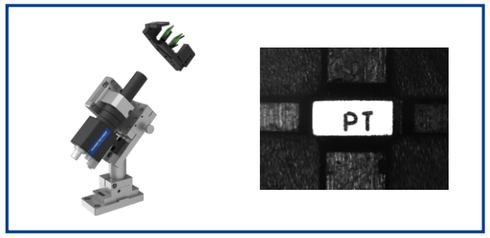
QV系列视觉检测系统，为半导体行业的各式封装器件，对产品管脚及塑封体进行字模、2D管脚、3D管脚及塑封体表面瑕疵等全方位、高精度视像检测

应用方便、操作简易、系统运行稳定，提升客户的生产能力及时检测半导体行业各类器件精确度，提高生产效率，执行校准快捷，保证零次品率，提高生产质量。

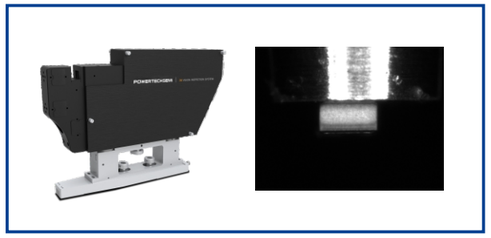
The QV series vision inspection system is designed for various semiconductor packaging devices, providing all-round and high-precision vision inspection for product pins,2D pins, 3D pins, and surface defects of the encapsulation body. It offers convenient application, easy operation, and stable system performance, enhancing customer production capacity. It ensures timely and precise detection of various semiconductor devices, improving production efficiency. The quick calibration execution guarantees zero-defect rates, enhancing production quality.



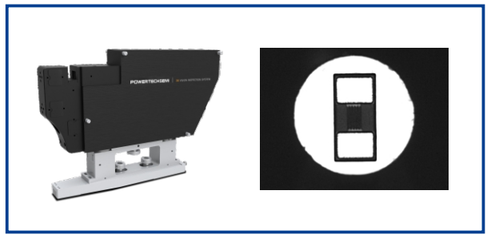
打印检测 Printing Inspection



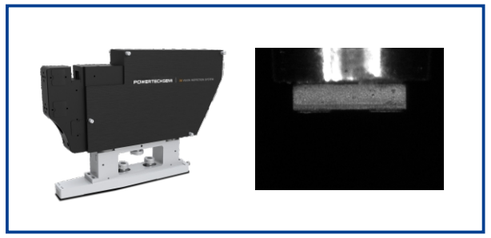
短侧面检测 Short Side Inspection



底面检测 Bottom Inspection



长侧面检测 Long Side Inspection

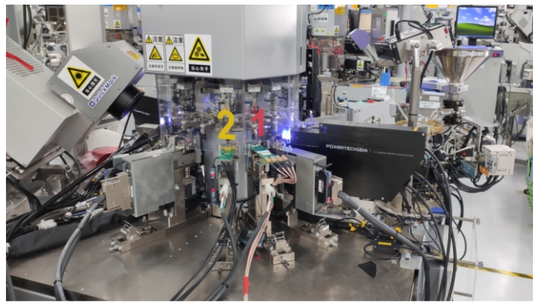


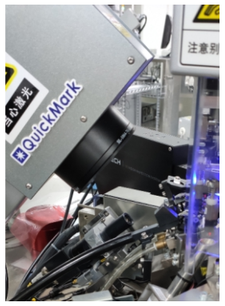
主要特点 Key Features

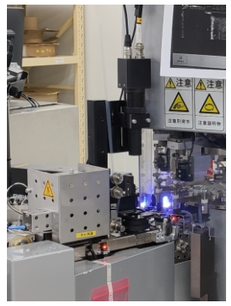
- 基于半导体行业需求设计开发，采用运行稳定的工业相机及工控电脑，数字传输准确无误，反应迅速，抓图清晰，完整可靠
- 全面满足最高速Handler的生产速度，检测工位齐全，满足客户各种的检测需求。可配置的检测工位有:方向工位、印字工位5S工位、编带工位等
- 本系统可配搭各款Handler，检测范围涵盖半导体各类器件，如:QFN、DFN、SOT、SOD、SOP、TO、TSSOP系列等
- 软件系统提供中英文界面、多级权限控制，自动化程度高。软件系统100%自主研发，按照机器视像检测流程，优化组合、易于操作应用
- 所有工业相机的各项参数，如快门时间、增益、对比度、光源亮度等均可通过程序调节

- Designed and developed based on the needs of the semiconductor industry, using stable industrial cameras and industrial computers for accurate and error-free digital transmission, providing rapid response, clearimage capture, and reliable performance
- Fully meets the production speed of high-speed Handlers, with various inspection stations to meet different customer inspection requirements. Configurable inspection stations include orientation station, printing station,5S station, tape-and-reel station, etc
- The system is compatible with various Handlers, covering a wide range of semiconductor devices such as QFN, DFN, SOT, SOD, SOP, TO, TSSOP series, etc
- The software system provides a user interface in both Chinese and English, with multi-level access control for high automation. The software system is 100% independently developed, optimized for machine vision inspection processes, and easy to operate and apply
- All parameters of industrial cameras, such as shutter time, gain, contrast, and brightness of the light source, can be adjusted through the program

现场应用 Onsite Application







全自动探针台
6"/8" Fully Automatic Wafer Prober

QP2000

技术特点 Technical Feature

- 晶圆OCR读取
- 自动对针系统
- 模块化结构设计
- 高、低温承片台
- 双臂洁净陶瓷机械手
- 自动磨针，清针

- Wafer ID OCR
- Auto Probes-Aligning System
- Modularization Design
- Hot/Cold Temperature Chuck
- Dual Clean Ceramic Arms
- Probers Grinding Cleaning

功能归类	项 目	QP2000
功能指标 Function Specs	晶圆尺寸 Wafer Size	6 and 8 Inch
	晶圆厚度 Wafer Thickness	80~1000μm
	翘曲度 Wafer Warpage	±2000μm
	芯片大小 Chip Size	200~15000μm
	晶圆重量 Wafer Weight	最大 200g Max.200g
XYZθ轴工作行程 Axis Travel Range	XY 轴工作范围 Test Range	250X420 mm
	Z 轴工作行程 Axis Travel Range	25mm
	θ 轴工作行程 Axis Travel Range	± 5°
XYZθ轴精度指标 Travel Range	XY 轴最大速度 Max Speed	X: 200mm/s Y: 200mm/s
	XY 轴分辨率 Resolution	0.1 μm
	XY 轴定位精度 Axis Accuracy	≤±2μm
	Z 轴重复精度 Axis Repeat Accuracy	≤±1μm
	Z 轴分辨率 Axis Resolution	0.1μm
	θ 轴分辨率 Resolution	0.0005298°
承片台 Chuck	承载力 Contact Force	≥50KG
	绝缘电压&电流 Insulation Voltage & Current	电压 8KV、600A(脉冲) Volt.8KV、600A(Pulse)
	温度(可选) Temperature(Option)	温度范围：25°C~200°C Temperature Range 25°C~200°C
		升温/降温：＜45分钟 Heating/Cooling: < 45min
	温控精度 Temp Accuracy	±1°

功能归类	项 目	QP2000
功能配置 Function Configure	探针卡类型 Probe Card Type	圆形或方形探卡 Circle Probe Card or Separate Probes
	针痕 Imprint	针痕位置、大小一致≤±2um Imprint Size: ≤±2μm
	晶圆ID识别 Wafer ID OCR	有，SEMI标准 Yes, SEMI Standard
	磨针、清针功能 Needle Grinding Cleaning Function	有 Yes
	多Site测试 Multiple Sites	≤16Site
	HARD DOCKING TESTER HEAD INTERFACES	适配
	MAP	兼容TEL/TSK格式、自动Mapping编辑 导入、导出 TEL/TSK Format, Auto Mapping Edit, Import, Export
	Bin MAP	TEL/TSK格式、62bin、导入、导出 TEL/TSK Format, 62bin, Import Export
	测试仪接口 Tester Interface	GPIB, TTL, RS232, TCP/IP
	对准相机 Aligning Camera	自动扫平、对准首点 针痕检查，上片后自动对准 Camera Auto Aligning Imprint Inspection
	打点功能（可选项） Dot Function(Option)	有 Yes
机械手 Mechanical Arm	机械手传送速度 Mechanical Arm Transfer Speed	单片平均传送时间＜30S Wafer Transfer Time < 30S
	机械手叉子选型 Mechanical Arm Type	1.伯努利 Bernoulli 2.真空 Vacuum 3.夹持 Clamp
配置环境 Facility Requirement	电源及功率 Supply and Power	AC 200~240V,1.5KW(不含热盘加热功率) Not Include Heating Chuck
	气源 CDA	0.4MPa(4kgf/cm²)~0.7MPa 流量 (Flow): 18L/Min
	真空源 Vacuum	-80kPa 流量(Flow):15L/Min
	氮气源 Nitrogen	氮气压力0.4Mpa Nitrogen Pressure 0.4Mpa

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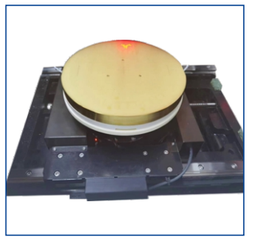
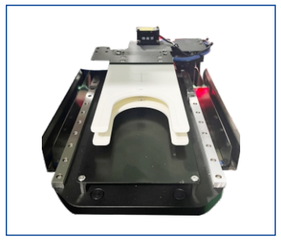


承片台 Chuck



机械手 Mechanical Arm

寻边器 Wafer Aligner

应用方向 Application Direction

适用SiC, GaN，Si晶圆，主要应用在IC及大功率芯片测试，高性能可更换的CHUCK，应对多种不同接口的探针卡，不同类型的测试方案，支持高压测试防打火模块、高温模块、遮光模块，WAT测试等高性能解决方案。

Suitable for SiC, GaN, Si wafers, mainly used in IC and high-power chip testing, high-performance replaceable CHUCK, to cope with a variety of different interfaces of probe cards, different types of test solutions, support high voltage test anti-spark module, high temperature module, light blocker, WAT test and other high-performance solutions.

全自动探针台
12" Fully Automatic Wafer Prober
QP3000

技术特点 Technical Feature

- 晶圆OCR读取
- 自动对针系统
- 模块化结构设计
- 自动针卡更换
- 双臂洁净陶瓷机械手
- 光栅尺、伺服双闭环高精度设计
- 大尺寸磨针清针机构

- Wafer ID OCR
- Auto Probes-Aligning System
- Modularization Design
- Probe Card Auto exchange
- Dual Clean Ceramic Arms
- Grating ruler, Servo Closed Loop
- Big Probers Grinding Cleaning module

功能归类	项 目	QP3000
功能指标 Function Specs	晶圆尺寸 Wafer Size	8 and 12 Inch
	晶圆厚度 Wafer Thickness	80~1000μm
	翘曲度 Wafer Warpage	±2000μm
	芯片大小 Chip Size	200~15000μm
	晶圆重量 Wafer Weight	最大 200g Max.200g
XYZθ轴工作行程 Axis Travel Range	XY 轴工作范围 Test Range	340mm X 765mm
	Z 轴工作行程 Axis Travel Range	37mm
	θ 轴工作行程 Axis Travel Range	± 5°
XYZθF轴精度指标 Travel Range	F 轴行程 Axis Travel Range	39mm
	F 轴最大速度 Max Speed	18mm/s
	XY 轴最大速度 Max Speed	X: 300mm/s Y: 230mm/s
	XY 轴分辨率 Resolution	0.1 μm
	Z 轴定位精度 Axis Accuracy	≤±2μm
	Z 轴重复精度 Axis Repeat Accuracy	≤±1μm
	Z 轴分辨率 Axis Resolution	0.1μm
	θ 轴分辨率 Resolution	0.000282°
	F 轴分辨率 Resolution	1μm
承片台 Chuck	承载力 Contact Force	≥200KG
	绝缘电压&电流 Insulation Voltage & Current	电压 8KV、600A(脉冲) Volt.8KV、600A(Pulse)
	温度（可选） Temperature(Option)	温度范围：-50°C~200°C Temperature Range -50°C~200°C
		升温/降温：＜45分钟 Heating/Cooling: < 45min
	温控精度 Temp Accuracy	±1°C
机械手 Mechanical Arm	机械手传送速度 Mechanical Arm Transfer Speed	单片平均传送时间＜30S Wafer Transfer time < 30S
	机械手叉子选型 Mechanical Arm Type	1.伯努利 Bernoulli 2.真空 Vacuum

功能归类	项 目	QP3000
功能配置 Function Configure	探针卡类型 Probe Card Type	圆形或方形探卡 Circle Probe Card or Separate Probes
	晶圆ID识别 Wafer ID OCR	有，SEMI标准 Yes, SEMI Standard
	Prober card 定位自动切换针卡 Probe Card Position	有 Yes
	自动切换针卡 Auto Change Probe Card	有 Yes
	磨针、清针功能 Probe Grinding Cleaning Function	有 Yes
	多Site测试 Multiple Sites	≤16Site
	HARD DOCKING TESTER HEAD INTERFACES	适配
	MAP	兼容TEL/TSK格式、自动Mapping编辑导入、导出 TEL/TSK Format, Auto Mapping Edit, Import, Export
	Bin in MAP	TEL/TSK格式、62bin、导入、导出 TEL/TSK Format, 62bin, Import Export
	测试仪接口 Tester Interface	GPIB, TTL, RS232, TCP/IP
	打点功能（可选项） Dot Function(Option)	有 Yes
	对准相机 Aligning Camera	自动扫平、对准首点 针痕检查，上片后自动对准 Camera Auto Aligning Imprint Inspection
配置环境 Facility Requirement	电源及功率 Supply and Power	AC 200~240V, 2KW(不含热盘加热功率) Not Include Heating Chuck
	气源 CDA	0.4MPa(4kgf/cm²)~0.7MPa 流量 (Flow): 18L/Min
	真空源 Vacuum	-80kPa 流量(Flow): 15L/Min
	氮气源 Nitrogen	氮气压力0.4Mpa Nitrogen Pressure 0.4Mpa

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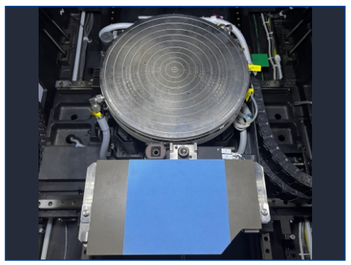
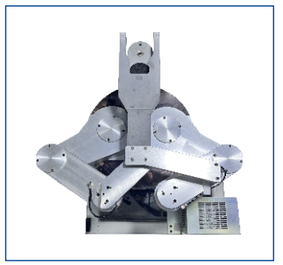
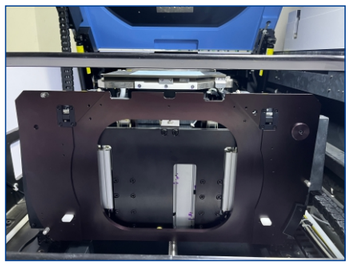


承片台和磨针台 Chuck and Grinding



机械手 Mechanical Arm



自动换探卡 Auto Change Probe Card

应用方向 Application Direction

支持数模混合/SoC,汽车电子/电源产品,CIS/MEMS等类型芯片晶圆测试，高性能可更换的CHUCK,自动更换针卡，洁净真空陶瓷机械手，适配不同品牌型号的测试系统 Hard Docking/Direct Docking/Cable mount，定制不同类型的测试方案，支持高低温测试模块,WAT测试等高性能解决方案。

Support Digital-Analog hybrid/SoC ,Automotive electronics, power supply,CIS/MEMS products wafer test, high performance exchangeable chuck, auto exchange probe card, clean ceramic arms, connect various testers, support Hard Docking/Direct Docking/Cable mount. Also support customization systems, hot/cold temperature module, WAT ,etc.

Industry applications 行业应用

- 我们的半导体封测设备，在国内以及全球各地半导体市场均得到客户的青睐和广泛应用，拥有稳定增长的客户群，包括当今世界最重要的半导体元器件生产制造商，我们为行业客户提高生产力！

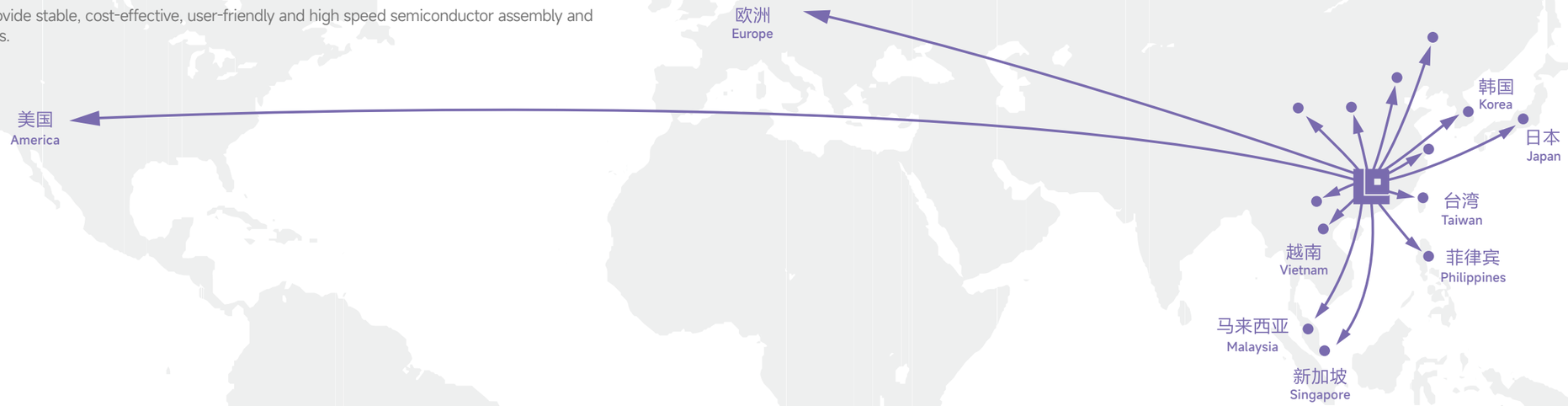
- 我们的技术工程师，均经过专业的技术培训，能快速地响应产品在销售过程中客户提出的任何意见和建议。而我们的售后服务支持团队，总能及时到达客户现场，保证客户得到最好的服务。

- 我们提供成本更低、设备运行更为稳定，应用操作更为简单、且测试速度更为快速的半导体封装测试设备。

- Our product have been adopted by customers locally and abroad, including the leading semiconductor manufacturers world-wide. Our customer base is growing steadily, as we support our customers in increasing productivity.

- Our well trained engineers provide quick response to customers' demands;
  Our service team always reach customer site in time to ensure best service.

- PowerTECH provide stable, cost-effective, user-friendly and high speed semiconductor assembly and test equipments.



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