



Super Cam X

INFRARED THERMAL IMAGING ANALYZING CAMERA

红外热成像分析仪

QIANLI 潜力

售后政策

After-sales Policy

自购买之日起, 1个月内包换, 1年内保修, 保修期过后根据维修程度收取零部件更换费用
(因销售区域差异, 具体保修详询客服或代理)

From the date of purchase, replacement within 1 month and warranty within 1 year. After the warranty period, the replacement fee will be charged according to the degree of repair (due to differences in sales regions, please contact customer service or agent for specific warranty details)

注: 非正常使用不在保修范围
The following conditions are not covered by the warranty

长时间检测超出温度量程的超高温物体
Long time detection of ultra-high temperature objects that exceed the temperature range

进水或渗入其他液体
Water or other liquids damage

使用非标Type-C线或过压供电
Use non-standard Type-C cable or overvoltage power supply

暴力损坏
Violent damage

高温或超低温环境使用
Use in high temperature or ultra-low temperature environment

不可以观测高能量目标物体, 如: 太阳, 激光等, 将会灼伤相机, 造成不可逆转的损伤。
Cannot Observe high-energy objects, such as sun, laser etc., which will physically damage the camera and cause irreversible damage.

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Windows 软件下载地址
Software Download link
www.qianlispace.com



“潜力创新”公众号 “潜力创新科技”官方微博



扫描二维码查看教程视频

Scan the QR code to view the tutorial video



关于产品 About Product

Super Cam X 红外热成像分析仪 是潜力创新首款自主研发的高分辨率红外热成像测温设备, 用红外成像技术配合智能算法在软件上实时显示被检测主板各芯片、电阻、电容等元器件的运行温度数据, 或者分析主板热场分布合理性等, 旨在通过温度数据来判别主板运行状态。功能主要针对PCBA维修定位、设计合理性分析及产品热分布评测等。

Super Cam X Infrared thermal imaging analyzing camera is the first independent developed high-resolution infrared thermal temperature measurement equipment from QIANLI. It adopts infrared thermal imaging technology and intelligent algorithms to display real-time operating temperature data of the components on the PCBA (Printed Circuit Board Assembly), such as chipsets, resistors and capacitors, analyze and optimize the motherboard thermal field distribution. The function is mainly focus on PCBA troubleshooting and repair, temperature distribution design analysis and product temperature distribution evaluation.

产品特性 Product Features

“一键速查”功能, 秒杀即查故障点减少客户等待时间, 提高店铺营业效率
"Electricity Leakage Quick Check" to check the defect instantly, reduce customer waiting time, improve working efficiency.

精准筛查故障, 专业查杀微小漏电流, 短路疑难故障, 极大限度降低故障误判几率
Accurate defect screening, professionally detect small current leakage and short circuit, minimize the chance of fault misjudgment.

插电即用, 维修全程环保告别传统使用松香排査手段, 远离含铅等重金属有毒化合物对身体健康的影响
Plug and play, environmentally friendly without rosin, and stay away from the impact of lead and other heavy metal toxic compounds on your health.

新增3D热场分析、区域温度曲线分析, 硬件三脚架拓展, 适应更多使用场景
Additional features like 3D thermal imaging field analysis, regional area temperature curve analysis, compatible with all standard 1/4 inch tripod expansion to suit for more applications.

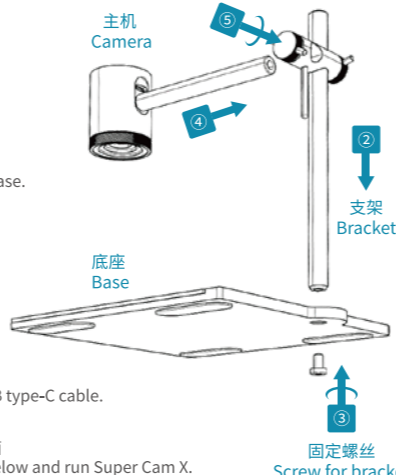
硬件

包装清单 Package List

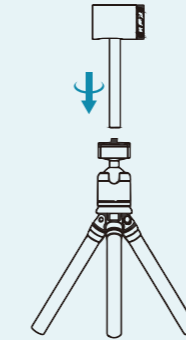
主机 Camera*1 支架 Bracket*1 扳手 Allen Wrench *1 固定螺丝 Screw for bracket *1 底座 Base*1 数据线 USB Type-C cable*1 说明书 User guide *1

整机组装步骤说明 Installation Instruction

- 从包装中拿出设备部件
Take out the devices and parts from the package
- 支架插入底座
Insert the bracket into the base.
- 使用配置的六角扳手拧上底部螺丝
Use the allen wrench to tighten the screw for the base.
- 主机插到支架上
Insert the camera into the bracket.
- 拧上固定旋钮
Tighten the fixed screw on the bracket.
- 通过Type - C线连接电脑
Connect the computer with the camera via the USB type-C cable.
- 通过下方网站下载“潜力修复助手”转入红外检测界面
Download the QLRepairHelper from the website below and run Super Cam X.



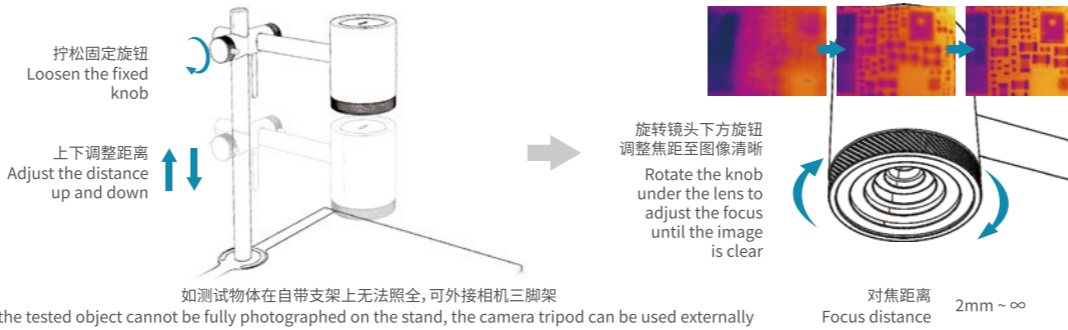
拓展功能 Expansion



主机预留 1/4 英寸相机螺纹孔可安装在任何标准相机支架上
The camera reserves 1/4 inch camera threaded hole. It could be installed on any standard camera stand.

像头升降与焦距调整 Camera Lifting and Focus Adjustment

如需检测小范围、高清晰度的局部热分布或大范围热分布, 可调整像头与被测物体的距离实现, 调整距离后相应需要调整像头“焦距”
If you need to detect small-scale and high-resolution local heat distribution or large-scale overall heat distribution, you can adjust the distance between the camera and the tested object. After adjusting the distance, you need to adjust the focal distance of the camera accordingly.



产品参数 Product Parameter

红外参数 Thermal Parameter		接口和显示功能 Interface & Display Function	
探测器类型 Detector Type	非制冷氧化钒探测器 Uncooled Vanadium Oxide Detector	显示模式 Display Mode	红外热成像 Infrared Thermal Imaging
分辨率 Resolution	52000 (260 x 200)	接口类型 Interface Type	USB Type C
波长范围 Wavelength Range	7 ~ 14 um	图片存储格式 Picture Storage Format	JPG (640 x 480)
镜头视角 Camera Angle	42° x 32°	视频存储格式 Video Storage Format	MP4
帧频 Frame Frequency	25Hz	测温性能 Temperature Measurement Performance	
物理特性 Physical Features		测温功能 Temperature Measurement Function	全幅测温 Full-scale Temperature Measurement
支架尺寸 Bracket Size	150mm x 160mm x 161.5mm	测温距离 Temperature Measurement Distance	2mm ~ ∞
净重 Net Weight	435g	测温精度 Temperature Measurement Accuracy	±5°C 或 ±5 %
安装 Installation	可拆卸安装 Removable installation	测温范围 Temperature Measurement Range	-20°C ~ 120°C
电源 Power Supply		使用环境 Application Environment	
输入电压 Input Voltage	5V DC	存放温度范围 Storage Temperature Range	-15°C ~ +60°C
功耗 Power Consumption	<250mw	湿度 Humidity	95%相对湿度 95% Relative Humidity

主要特点 Main Features

一键速查, 快速定位 Ultra-high speed troubleshooting by one click.	超高分辨率; 抓拍/录像; 图像算法解析 Ultra high resolution; Capture/Video; Image algorithm analysis	精准对焦 Precise focus
区域温度曲线记录 Regional temperature recording curve	像头通用相机固定架、三角架 Universal camera mount and tripod	高温报警追踪 High temperature alarm tracking
防静电硅胶 ESD silicone	Type-C、USB直连PC Type-C, USB direct connection to PC	3D热场分布解析 3D thermal field distribution analysis

软件

电脑建议最低配置要求 PC Recommended Minimum Configuration Requirements

CPU	i3 处理器 i3 CPU	内存大小 RAM	2G及以上 2G and above
操作系统 OS	Propose Windows 10 (Windows 7 compatible)	显示器 Display	分辨率1366*768以上 Resolution of 1366*768 and above

软件下载安装 Software Download and Installation

[HTTPS:// WWW.QIANLISPACE.COM](https://www.qianlispace.com)



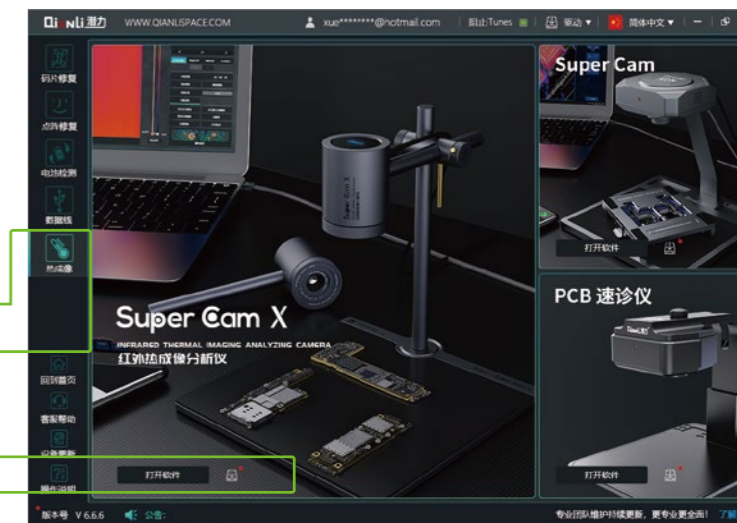
在潜力官网“下载专区”下载潜力修复助手, 安装注册后如下点击热成像界面, 选择Super Cam X即可打开软件
Download the QLRepairHelper from "Download" of QIANLI official website, after installation and registration, then select Super Cam X to run the software.



热成像通过Type - C数据线连接PC电脑
Connect the thermal imaging camera to the PC via USB type-C cable

点击切换热成像界面
Click to switch thermal imaging interface

点击下载按钮下载软件
下载完后点击打开软件
Click the "Download" icon to download the software
Click to run the software after downloading



注: 如需在无网络情况下使用, 可先通过有网络的电脑注册安装后, 把安装目录全部文件拷贝到无网络电脑。
Tips: If you need to use it without network, you can first register and install it through a computer with network, and then copy all the files in the installation directory to a computer without network.



1 连接状态及设备ID显示
Connection status and device ID
 连接状态显示, 红点表示设备未连接, 绿点表示设备已连接
 设备ID显示当前连接设备的硬件编号
 Connection status:
 Red dot indicates the device is disconnected,
 Green dot indicates the device is connected.
 The device ID shows the serial number of the current connected device.

2 热成像色板切换
Thermal imaging color palettes switch
 点击图标切换热成像显示色板, 不同色板适合不同应用场景
 Click the icon to switch different thermal imaging color palettes,
 different color palettes are suitable for different application scenarios.

3 图像旋转镜像切换
Image rotation and flip switch
 在改变镜头方位时用以旋转、镜像热成像显示画面
 When necessary, you may click the rotate or flip icon to change the image direction to suitable for the target objects.

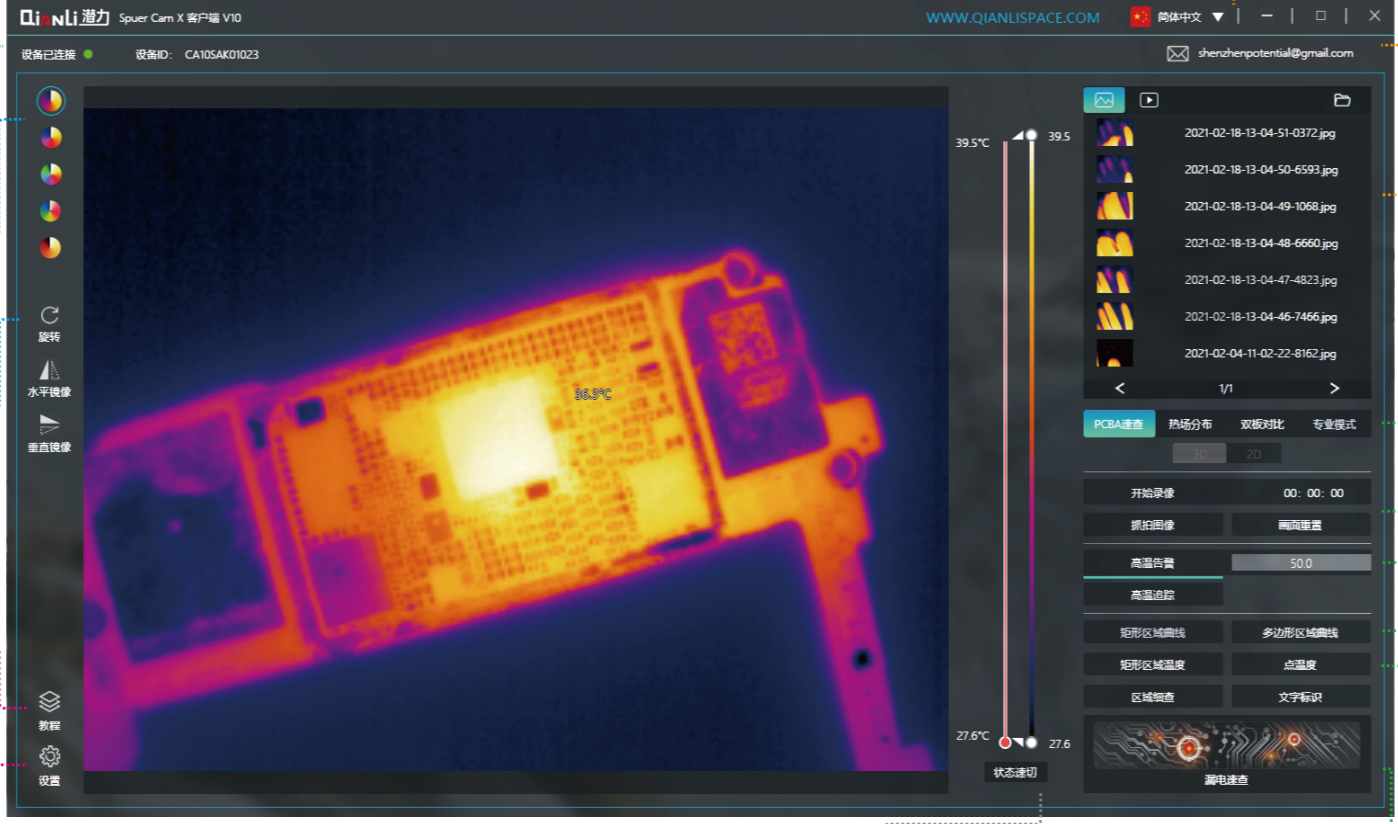
4 设备教程及设置
Device tutorial and configuration
 点击教程可打开热成像说明书, 并附带教程视频二维码, 可扫码查看教程
 Click the tutorial icon to open the thermal image instruction.
 Please scan the QR code to get the instruction.

5 软件设置
Software Configuration
 开关鼠标温度追踪、温度单位切换、高温报警声音切换及持续时间调整、3D对比等级调整、速查固定温度间隔调整抓拍及录像存储位置更改
 Turn on or turn off the Mouse Temperature, Temperature Unit, Alarm Sound, Alarm Duration, adjust 3D Comparison Level and Fix Temperature Range, change Pictures Folder and Videos Folder location.

环境参数校正, 仅供专业人员使用, 参数会影响测量数据
 Parameter Correction is only for very professional engineers, normally default parameters can work well in most application scenarios.

参数校正
 0.98 0 0.45 0.0 25.0 25.0 恢复默认
 发射率 距离 湿度 修正 反射温度 环境温度

Parameter Correction
 0.98 0 0.45 0.0 25.0 25.0 Default
 Emissivity Distance Humidity Correction Reflected Ambient



6 图像显示
Thermal Image
 热成像的成像区域, 所有功能在此界面上显示结果, 如图像不清晰可调整镜头下旋钮对焦。区域性功能(如14、15)需在此界面上二次操作。
 Thermal image area, all the features and results will be displayed in this area, if the thermal image is not sharp enough, please adjust the lens to get clear focus. The zone area features (eg. 14, 15) need secondary operation in this area.

7 温度调整
Temperature range adjustment
 此功能为核心功能, 鼠标拖动圆点调整温宽, 可定位不易察觉的漏电短路
 This feature is the core feature, to drag the white dot to adjust the temperature range, which can locate the electricity leakage and short circuit.
 温宽显示范围决定图像对比度, 在微漏电或者有大干扰源的情况下, 直接通过漏电速查按钮无法直接定位漏点, 可通过拉动温宽点调整图像对比度定位异常点
 The temperature range will affect the image contrast, when very small current leakage or large interference source is nearby, the "Electricity Leakage Quick Check" cannot easily locate the leakage component, you may adjust the temperature range to change the image contrast to locate the leakage component.

8 语言切换 Language switch
 中文、英文、西语切换 Switch the software language among Chinese, English and Española.

9 邮箱反馈 Email feedback
 对产品的优化建议、软件BUG反馈、商务洽谈等, 可通过此邮箱与我们联系
 For product optimization proposal, software bugs feedback, business opportunities etc. please contact us via this Email.

10 抓拍的图像及录屏预览 Captured image and screen recording preview
 使用中“抓拍”或者“录屏”视频的预览窗口, 双击可直接打开文件, 可通过系统文件夹修改名称及删除
 For the preview window, when using the functions of the "Capture" or "Record Screen" in the video, you can double-click to open the file directly and modify the name and delete it through the system folder.

11 分析模式切换 Analysis mode switch
 三种热成像分析模式的切换, 对应故障维修定位、热分布分析、双板热量区别对比等
 Switch the types of 3 thermal imaging modes: Check - it is for detect PCBA troubleshooting and repair. Thermal - it is for 3D heat distribution analysis. Comparison - it is for two PCBA heat distribution comparison.

12 录像、抓拍、重置画面 Video, capture, reset screen
 录制软件界面、抓拍热成像画面、重置画面恢复至默认
 Record software interface, capture thermal imaging picture, reset picture back to default.

13 高温告警、高温追踪 High temperature alert, high temperature tracing
 高温报警, 超过设定温度图像闪烁红色线框并响起警报声, 高温追踪画面内最高温点并标识温度
 When the high temperature threshold is exceeded, there will be red frame flash and sound from the computer. The high-temperature trace the highest temperature point of the whole image, and show the temperature value.

14 矩形、多边形区域温度曲线 Temperature curve of rectangular and polygonal area
 点击按键后可在画面中绘制矩形或多边形, 实时显示框内的温度历史曲线
 After clicking the button, you can draw a rectangle or polygon on the screen to display the temperature curve history in the frame in real time.

15 矩形区域温度、区域细查、文字标识 Rectangular area temperature, regional detailed inspection, text mark
 点击按键后可在画面中绘制矩形, 显示矩形内温度追踪, 再点击区域细查, 可单独对框内温宽进行调整细查。
 文字标识: 在实时画面中加入文字标注
 After clicking the button, you can draw a rectangle on the screen to display the temperature tracking within the rectangle, and then click the regional detailed inspection to adjust and check the temperature range in the frame separately. Text mark: add text mark in real-time screen.

16 漏电速查 Electricity Leakage Quick Check
 根据实时温度自动拉高画面对比度, 快速定位温度异常点, 可通过温宽调整细查
 According to the real-time temperature, the image contrast can be automatically increased, and the abnormal temperature can be quickly located, which can be checked by adjusting the temperature range.

模式一 Mode One PCBA速查 PCBA quick diagnosis
 针对电路板故障维修的分析模式, 通过“漏电速查”拉高温宽对比度, 并调整温宽范围, 快速定位电路板的短路点、发现漏电元件等故障。最低可以探测6mA左右的电流漏点
 This mode is focus on the PCBA defect troubleshooting and repair, by pressing the button "Electricity Leakage Quick Check" to increase the contrast of the image, and adjust the temperature range, to quickly locate the PCBA short circuit and electricity leakage etc., it can detect the minimum 6mA electricity leakage.

故障定位方式: 将被测PCBA置于镜头下, 调整旋钮焦距至画面边缘清晰, 给PCBA通电, 点击“漏电速查”快速定位故障点, 如果漏电电流太小, 可通过调整温宽范围来拉高对比度
 Defect location method: Place the PCBA under the lens and adjust the lens focus then get a clear image, power on the PCBA, press the button "Electricity Leakage Quick Check" to quick locate the defect, if the electricity leakage current is too small, you may adjust the temperature range to increase the contrast of the image.

模式二 Mode Two 热场分布 Thermal imaging field distribution
 针对产品、电路板热场分析的模式, 如电路板板的热结构设计合理性分析、产品散热效率设计分析等
 This mode is focus on thermal imaging field distribution of the product and PCBA, such as PCBA layout heat evenly distribution and product heat dissipation efficiency etc.

3D热场模式 3D thermal imaging field distribution

2D热场模式 2D thermal imaging field distribution

2D热场可开启框内温度曲线分析, 查看框内一段时间内的温度变化, 此功能持续更新升级优化
 2D thermal imaging field mode can enable the temperature curve analysis, to check the temperature change during specific duration, this feature will be continuous updated and optimized.

模式三 Mode three 双板对比 Comparison
 针对热分布设计优化、故障板与正常板对比分析的模式, 通过差异化双边对比验证
 This mode is to optimize the heat distribution design, defect and working PCBA analysis, to compare the defect and the working PCBA to locate the defect.

模式四 Mode four 专业模式 Professional Mode
 专业模式为拓展功能预留, 将在产品上市后持续更新拓展(有更新会自动推送), 如您有功能性的需求建议, 可通过下方邮箱联系我们, 我们工程师团队将评估可行性及必要性后进行拓展更新
 The professional mode is for new professional features expansion, and this mode is not open yet, it will be updated automatically after some time. If you have new feature requirement and proposal, please contact us via below Email, our engineers will evaluate it, if possible and necessary, we will update it.

E-mail: shenzhenpotential@gmail.com