
规格承认书
SPECIFICATION

客户 (Customer) :	
型号 (Model Number):	BTP-IR-TF-98-SN01 SPEC
物料号 (Material Number:) :	
文件号 (Document Number) :	

编写 PREPARED BY	审核 CHECKED BY	批准 APPROVED BY
LJQ		

客户承认 Confirmation Approved:
确认意见 (COMMENTS) :
Date:

客户承认签章后敬请回传正本一份

Please kindly countersign the document and send it back.

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1. 主要规格参数/Specification:

触控模组尺寸 Size	$\leq 6\text{ms}$ (<55 寸以下) $\leq 7\text{ms}$ (55~65 寸) $\leq 12\text{ms}$ (<70~100 寸) $\leq 15\text{ms}$ (>120 寸)
最多支持点数 Maximum touch supported	40 点 40 touch 【1】
产品形态 Product Type	PCBA
报告分辨率 Reported Touch Resolution	32768 x 32768
单点响应速度 Response Time(Single Touch)	$\leq 10\text{ms}$ 【2】
上传帧率 Touch Refresh Rate	单点 $\geq 100\text{fps}$, 1point $\geq 100\text{fps}$;
最小识别点直径 Minimum Recognition Point Size	2.5mm（支持 2.8mm 细笔全屏书写） 【3】
两点最小点击识别间距 Minimum distance between two points（click）	40mm
触控精度 Touch Accuracy	$\pm 1\text{mm}$ 【4】
输入方法 Touch type	手指，画笔等任意不透明触摸物 Finger or other opaque objects
抗光性 Anti-light Interference	$\geq 80000\text{Lux}$ 【5】
结构玻璃厚度推荐 Glass recommendation	32-65 inch 3MM 框贴（2.8MM 全贴/0 贴） 3MM 玻璃内凹控制：0.3% 70-110 inch 4MM 框贴. 3.2MM 全贴/0 贴 4MM 玻璃内凹控制：0.2%

【1】指支持同时上报给 windows 系统的最大触点数量，并不代表能够最大点数的书写和画线。

Indicates the max number of point that can be reported to the Windows system at the same time, not indicate the max number of points that can be written.

【2】使用 BusHound 软件，单点长按屏中心点位置，取 Delta 栏显示的连续 10 点的平均值。

Use BusHound , 1 point long press the center point, choose the average value of 10 consecutive points.

【3】最小可识别 2.5mm 笔径，能保障 2.8mm 笔径全屏书写。边缘 10%区域可识别的画线直径要求 $\geq 8\text{mm}$ ；未布灯覆盖的丝印黑边区域可能不支持触摸。

The min pen diameter can be recognized by 2.5mm, support 2.8mm full-screen writing. Edge 10% area can be recognized line diameter requirements $\geq 8\text{mm}$; Areas with black edges that are not covered by lights may not support touch

【4】90%中心区域精准度±1mm，10%边缘区域精准度±3mm。

Accuracy is ±1mm for 90% of screen area and ±3mm around 10% of the edges;

【5】抗光性测试条件为：太阳光线与触摸平面夹角 30 度，且触摸 LED 灯不受阳光直射。

Anti-light Interference test conditions: the Angle between the sun ray and the plane is 30° , and the touch LED lamp is not exposed to direct sunlight.

2. 电子特性/Electrical Specification:	
供电方式 Power Supply Method	USB
工作电压 Working Voltage	4.75V-5.25V
平均电流 Average Current	≤500mA
功耗 Power Consumption	≤2.0W
通信类型 Communication	USB 2.0 全速 Full Speed（the length of cable should be ≤5m） TTL UART Baud rate: 115200; Data bit: 8 bits; Stop bit: one bit; Parity check: none.

3. 环境特性/Environmental Specification:	
湿度 Humidity	工作\存贮湿度：90%RH 在 40℃无结露 Up to 93% RH from 0° C to +40° C, non-condensing
温度范围 Temperature Range	工作温度：-10℃～50℃ Working temperature:-10℃～50℃ 存贮温度：-20℃～60℃ Storage temperature:-20℃～60℃
储存时间 storage time	六个月 6 months

4. 可靠性测试 (RELIABILITY)

低温操作 Low temperature operation	温度：-20℃，时间：48H Temperature: -20℃, time: 48H
低温启动 Low temperature start	温度：-20℃，时间：4H Temperature: -20℃, time: 4H
低温存储 Low temperature storage	温度：-20℃，时间：48H Temperature: -20℃, time: 48H
高温操作试验 High temperature operation test	温度：60℃，时间：48H Temperature: 60℃, time: 48H
高温、高湿操作 High temperature, high humidity operation	温度：60℃，湿度：95%RH，无凝结物，时间：48H Temperature: 60℃, humidity: 95%RH, no condensation, time: 48H
高温、高湿存储 High temperature, high humidity storage	温度：60℃，湿度：95%RH，无凝结物，时间：48H Temperature: 60℃, humidity: 95%RH, no condensation, time: 48H
温度变化试验 Temperature change test	温度：-20℃~60℃, 循环次数:10 次, 速率: 1℃/min Temperature: -20℃~60℃, Loop number: 10 times, Speed: 1℃/min
冷热冲击 Thermal Shock Test	高温：85℃，低温：-45℃，50 个循环 High temperature: 85℃, low temperature: -45℃, 50 cycles
静电等级 ESD	按照 EN 6100-4-2 2008:3 级。接触式放电 4KV, 空气式放电 8KV EN 6100-4-2 2008:3 level. 4KV contact discharge and 8KV air discharge

5. 系统兼容/System compatible

系统 OS	版本 Version	单点	多点
Windows	Win7 专业版和企业版 Win7 PE&Win7 Ultimate	√	√
	Win8&W.0in 8.1	√	√
	Windows10	√	√
	XP	√	×
Mac 【1】	Mac 10.8 以上版本 Mac 10.8 and above	√	×
Linux 【2】	Ubuntu 12.04 以上版本 (内核 3.15 以上) Ubuntu 12.04 and above (kernel 3.5 or later)	√	×
Android 【3】	内核 4.0 以上 Android5 and above	√	√
统信 Uos 【4】	版本 20	√	√

【1】Mac 系统下需要安装驱动，才能支持手势

Mac system need to install driver to support gestures.

【2】Linux 只支持单点，需要支持多点的话要额外开发程序

Linux just support single touch. It need to develop application to support multi-touch.

【3】部分 Android 系统需要定制适配，如有需要，请联系我们；

Some Android® needs additional adaptation. Please contact us if necessary.

【4】已实际测试版本为准；

Some Android® needs additional adaptation. Please contact us if necessary.

可提供私有协议，支持二次开发。

6. Testing Standard/测试标准

6.1 测试条件/Production testing condition:

序号 NO.	名称 Item	数量 Quantity	备注 Note
1	水平测试台 Test table	1 套 1set	大于触摸屏的玻璃面或直接装成整机测试，玻璃平整度±2mm 以内 Test on glass or test on a complete LCD, the flatness of glass should be <0.2%
2	电脑及显示 Operating system	1 套 1set	Windows 7 or Windows10 and above
3	测试笔工具 Test tool	1 套 1set	Φ8mm pen; Φ8mm 10-points test tool with 35mm gap between points.
4	测试软软件 Test software	1 套 1set	“InfraRedTouch” 测试软件

6.2 测试要求/Test requirements:

1. 拼装测试 PCBA 时要求静电防护，戴静电手套或手环

When assembling and testing PCBA, wear an anti-static ring and do anti-static protection;

2. 测试时周边不要有其它红外触摸屏同时工作，避免互相干扰

Make sure there is no other IR Touch bezel around the testing sample to avoid mutual interference.

3. 避免在大功率设备附近测试，避免受到干扰

Connect the ground wire of touch bezel to test bench to reduce electrical signal interference.

4. 生产车间、测试架及整机测试和工具必须要连接至大地。

Operating area, fixtures, tools and all related facility shall be grounding.

5. 画线时笔与玻璃垂线的偏角 ≤ 25 度，偏角大会影响测试结果准确性。

The deviation Angle between pen and glass vertical line during line drawing should be less than or equal to 25 degrees, or will affect the accuracy of test results.

6.3 信号测试及判定/Hardware Detection:

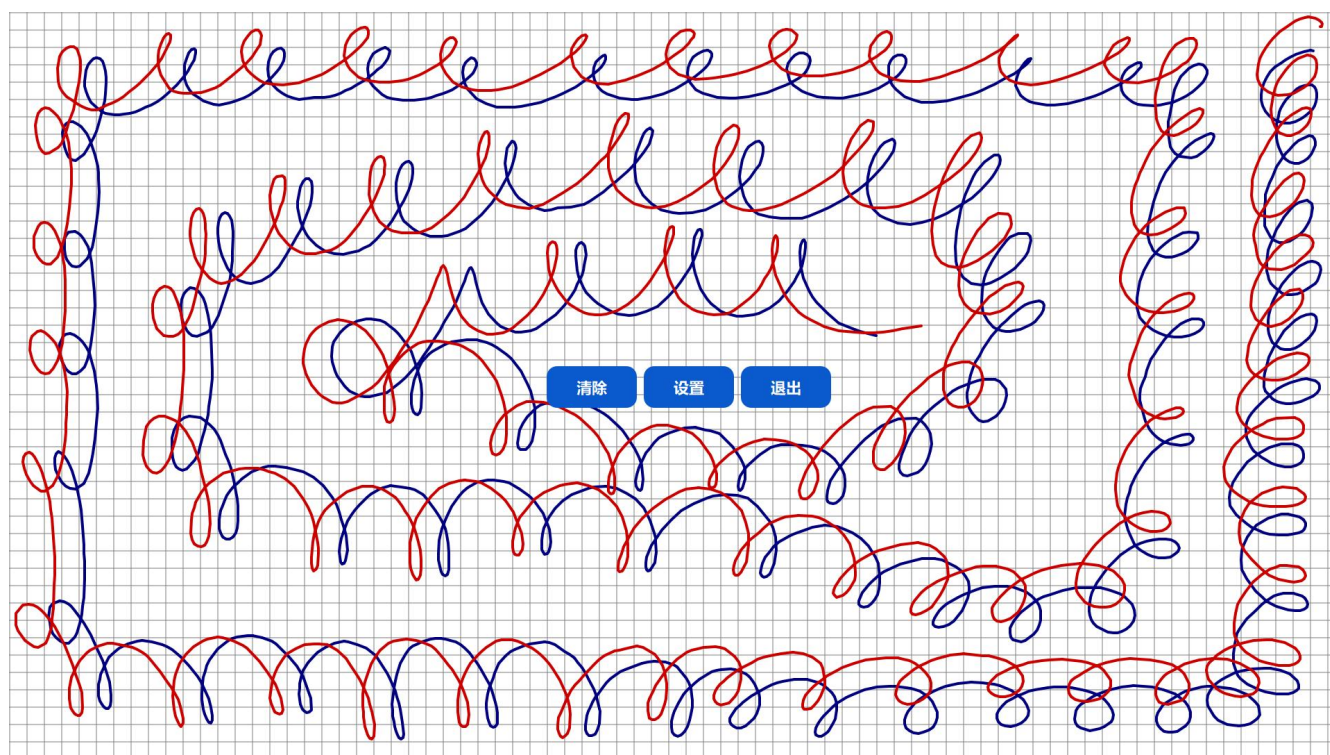
1. 连接触摸屏 USB 线至测试电脑，打开 InfraRedTouch 进入“工厂测试”，软件自动判定“√”为合格；“×”为不合格，参考下图

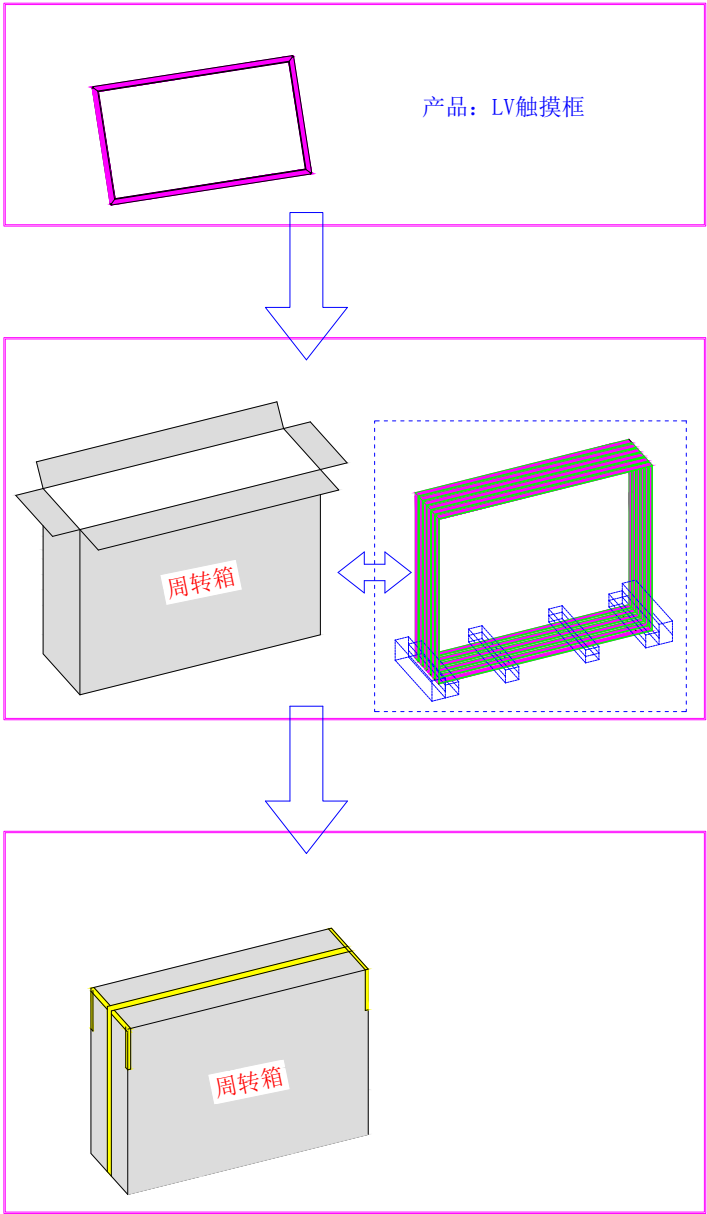
Connect the bezel to the computer, and open “InfraRedTouch” test software. On “Factory test” page, “√” is pass, “×” is judged as unqualified.



6.4 全屏画线测试 Full screen drawing test:

1. 打开“画图测试”， $\Phi 8\text{mm}$ 2 笔间距 $\geq 40\text{MM}$ 全屏匀速画线，要求 无跳点，无断线；
画线时由于角度和手势的不稳定，导致轻微的断线，可在相同位置重新画线，重新判定；
如下图为合格：
Enter “drawing test”， $\Phi 8\text{mm}$ ，distance between 2 pens $\geq 40\text{MM}$ ，full screen draw line，
Require no jump point，no broken line；
Line drawing due to Angle and gesture instability，maybe result in a slight line break，can redraw in the same position，re-determination .Qualified as shown below:





1. 请将 PCBA 储存在规定的湿度和温度环境下，避免长时间暴露在阳光下。

Please store PCBA under specified humidity and temperature environment, and avoid long time exposure with sunlight.

2.3 接触 PCBA 时戴防静电手套或防静电腕带，防止静电对 PCBA 造成损害。

Wear an ESD wrist strap or ESD gloves when touch the PCBA to prevent static electricity from damaging the PCBA

. 依据装配图连接 PCBA，并推动 PCBA 到铝材内。装配时佩戴防静电腕带，避免静电冲击损坏。
Connect PCBA according to assembly drawing and push PCBA into aluminum frame. Wear anti-static wristbands during assembly to avoid damage caused by static shock.

4. 避免触摸屏扭曲和弯曲。Avoid contortion and bending of the touch screen

5. 依据装配图连接 PCBA，并推动 PCBA 到铝材内，避免连接器连接错位以及元器件碰撞。

Connect PCBA according to assembly drawing and push PCBA into aluminum frame. Avoid misaligned connectors and component collisions

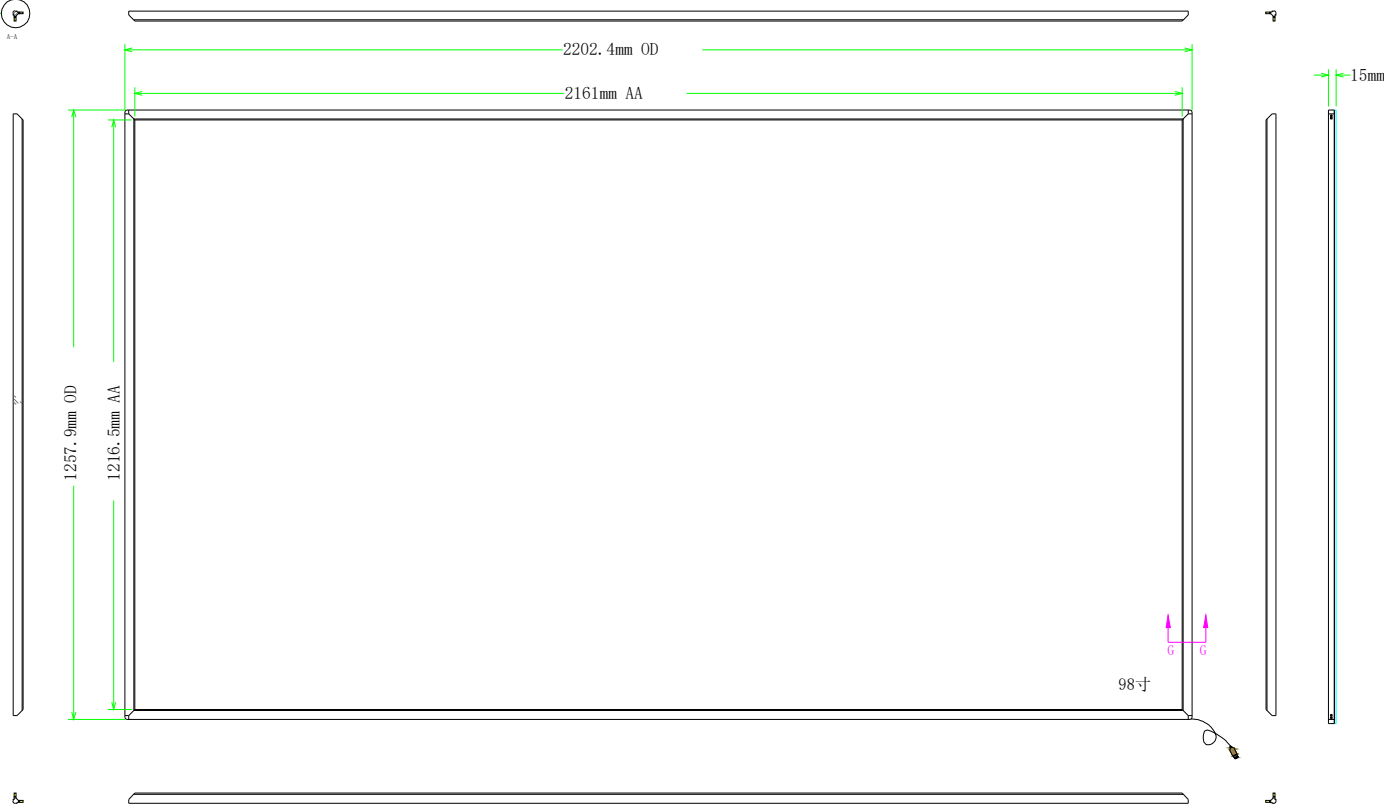
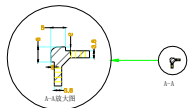
6. 不要将 PCBA 重叠堆放一起。PCBA cannot be stacked.

9. 产品图纸及线材图纸/Mechanical diagram



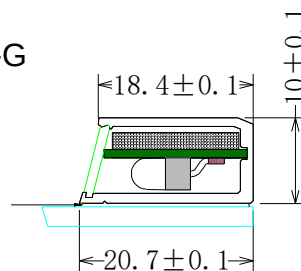
产品图纸见附页

Please find attached page for product drawings.



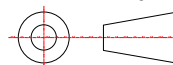
Section-G

1mm Tape



TOLERANCES (UNLESS OTHERWISE STATED)		
DECIMALS	ANGLES	±0.5°
>2000mm	±2.00mm	
1600<X≤2000mm	±1.20mm	
1200<X≤1600mm	±0.80mm	
800<X≤1200mm	±0.50mm	
400<X≤800mm	±0.30mm	
120<X≤400mm	±0.20mm	
30<X≤120mm	±0.20mm	
≤30mm	±0.15mm	

THIRD ANGLE PROJECTION



Part No.

BTP-IR-TF-98-SN01

Product Name:

98 inch IR Frame

Drawing No.

Project Code.

Business Unit:

SNT-BTP

Period Mark

A

View Angle



Ratio

1:1

BOM Code

Page 1

Total 1 Page

Product Series

IR Frame



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SINOTRONICS INC.