产　品　承　认　书

PRODUCT APPROVAL SHEET

客户名称 **Customer Name:**	
客户型号 **Customer Part No.:**	15.6inch
产品编号 **Part No.:**	HCT1562W-A2A
日　期 **Revision Date:**	2018.7.17

客　户　承　认 **Customer Approval**	
研发单位 **R&D Dept.**	品保单位 **Q&A Dept.**

设　计 **Designed by**	核　准 **Checked by**
DLT	MURPHY

变更记录
History of Version

版本 Ver.	日期 Date	描述 Description	页码 Page	变更人 Revised by
A00	2018.7.17	新版		DLT

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1 保证 / Warranty

此规定的保修条款适用于德怡的投射式电容触摸屏系列，本保修期限定为自产品发货之日起一年内。以下情况不在保修范围之内:

The warranty specified applies to Dignity's line of projected capacitive touch screens. The period of this warranty is defined as one [1] year from the date of shipment of the product. The warranty is considered to be null and void in case of the following:

- 不遵守本文件所述的使用、储存、处理、操作或其他方面，并导致产品失效，不包含在保修期内。
- 产品发货后触摸屏的物理损坏（破损，开裂等）。
- 意外或故意破坏行为，疏忽或不可抗力。
- 安装不当，二次加工制造或装配不当造成的损坏。
- 保修仅限于德怡提供的产品；德怡不作任何额外的保证，也不对我们产品故障导致的任何其他直接或间接损失负责。
- 所有不合格或有缺陷的产品都应按照我们的标准 RMA 程序书面报告。
- Failure to follow the use, storage, handling, operation or other aspects as outlined by this document and leading to product failure are not covered under warranty.
- Physical damage to the touch screen (breakage, cracking, etc.) that date from after the shipment of the product Accidental or Intentional Vandalism, Neglect or Force Majeure.
- Damage resulting from improperly conducted installation, secondary manufacturing activities or assembly.
- Warranty is only limited to the products provided by Dignity; Dignity makes no additional warranty, and are not responsible for any other direct or indirect loss caused by our product's failure.
- All non-conforming or defective products should be reported in writing as per our standard RMA procedure.

2 应用范围 / Application

此产品为投射电容触摸屏，常作为常用的电子器件和 OA 设备的输入装置。

The product is a projected capacitive touch panel used as the input devices for general electric appliances and OA equipment.

3 结构与规格 / Structure and Specification

3.1 结构 / Structure

结构 / Structure	材料 / Materials	描述 / Description	备注 / Remark
第一层 / First Layer	Cover Glass	钢化玻璃 Strengthening Glass	厚度: 1.1mm Thickness : 1.1mm
第二层 / Second Layer	Sensor	ITO 玻璃 ITO Glass	厚度: 1.1mm Thickness : 1.1mm
出线方式 / Tail type	FPC	FPC	镀金 Gold-Plated

3.2 规格 / Specification

项目 / Item	尺寸 / Dimension	单位 / Unit
外形尺寸 / Dimensional Outline	363.80（L）×215.90（W）×2.65（T）	mm
可视区 / Viewing Area	345.23（L）×194.54（W）	mm
驱动区 / Active Area	345.23（L）×194.54（W）	mm
FPC 长度 / FPC Length	85.30	mm

3.3 控制芯片型号 / IC Model

项目 / Item	规格 / Specification
IC	EETI，EXC80W46
Interface	Android,Linux,Win7,Win8,Win10,XP
OS	USB
注：IC 详细技术参数，请参考 IC 规格书。 Remark: Regarding the IC specification, please refer the IC data sheet from supplier.	

4 特性 / Characteristics

4.1 环境条件 / Environmental Conditions

项目 / Items	规格 / Specification		备注 / Remark
工作温湿度范围 Operating temperature & Humidity	-20℃~+70℃	-20℃～+40℃ / 10%-90%RH	单体，无结露 Panel only, Non-condensing
		+40℃～+70℃ / 10%-60%RH	
储存温湿度范围 Storage temperature & Humidity	-20℃~+70℃	-20℃～+60℃ / 10%-90%RH	
		+60℃～+70℃ / 10%-60%RH	
注：如需做带电环镜测试时，应将触摸屏组装成整机，单触摸屏不适宜做带电环镜测试。 Note: if environmental testing is required when the touch panel is powered on, it should be conducted with the touch panel incorporated into a final assembly or enclosure. Unassembled touch panels are not suited for environmental testing in powered on mode.			

4.2 电器性能 / Electrical Characteristics

项目 / Item	规格 / Specification	备注 / Remark
触控点 Touch point	10 点 10-Points	触控点同步侦测数量 The number of touch points simultaneously detect
最大使用电压 Max voltage	DC 5V max	/

4.3 机械性能 / Mechanical Characteristics

项目 / Item	规格 / Specification	备注 / Remark
输入方式 Input method	手指或专用触摸笔 Finger or exclusive pen	
操作压力 Operation force	≤10g	手指输入 finger input
表面硬度 Hardness	≥6H	500g 压力测试 Pressure 500gf test

4.4 光学特性 / Optical Characteristics

项目 / Item	规格 / Specification	备注 / Remark
透明度 / Transparency	≥85%	采用 550nm 可见光测试 Visible light at 550nm

5 外观检验 / Appearance Inspection

5.1 检验规则 / Inspection Regulation

5.1.1 检查范围 / Inspection Scope：

此标准只适用于可视区。即所有的外观不良，只要是在可视区以外，对产品功能不造成影响，均不考虑在内；所有可以使用软布用中性的清洁剂或异丙醇擦拭得掉的污渍均不考虑在内。

This standard applies only to visible areas. All areas outside of viewing area which will not influence product performance and all stains which can be wiped away by using neutral detergent or isopropyl alcohol and a wipe will not be regarded as a defect.

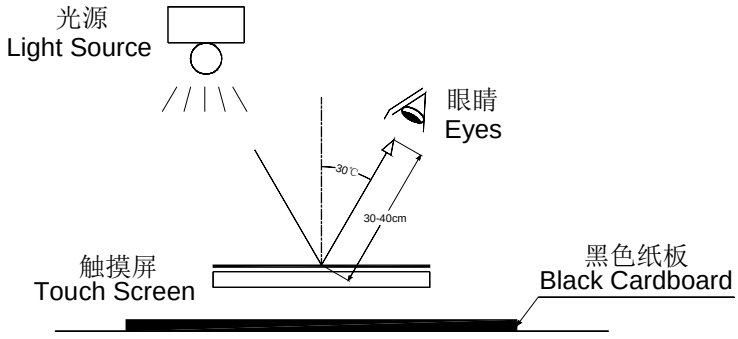
可视区定义：客户装配后可见的区域（一般为玻璃正面视窗），面板的可视区包括面板正面的丝印边框与面板的视窗。

Visible Area Definition: the visible area after customer assembly into enclosure (generally defined as the viewing window on the front side of the glass); the cover glass's visual area includes the silk-screened border on the front of the cover glass frame and the cover glass window's viewing window.

5.1.2 检查条件 / Inspection Condition：

视力 1.0 及以上的健康成人（带眼镜亦可），在 20-40W 的冷白色荧光灯下(要求检验台面照度在 1000～1200 Lux 之间)，物体与检测者眼睛距离 30-40 厘米，且在产品下方加以黑色和白色的纸板作为衬托背景，每片产品检测时间不超过 12 秒。如下图：

Staff is 1.0 and above visual acuity in healthy adults (including those using glasses). Source of the lighting for inspection is 20-40 W cool white color fluorescent light（Required inspection table's illumination between 1000 ~ 1200 Lux）, and viewing distance for inspection between eyes and product is maintained at 30-40cm. Meanwhile, add black and white cardboard under the product as background. Inspection time is less than 12 sec for each piece as the following:



5.2 粒状缺陷 / Dot Defects

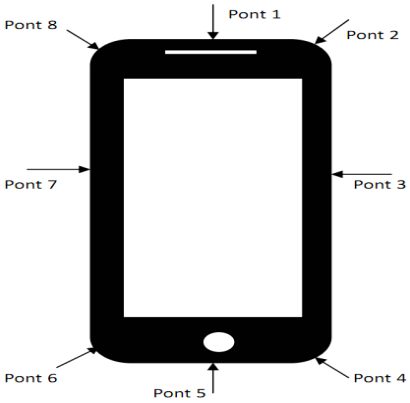
标准 CRITERIA（mm）		判定 DECISION
异色点（气泡） Different color points(bubble)	Φ≤0.25	不计，但不可密集 Excluded, but cannot be concentrated
	0.25＜Φ≤0.35	8
	0.35＜Φ≤0.45	6
	0.45＜Φ≤0.6	3

	Φ＞0.6	0
备注：任两个可接受缺陷的间距要求≥20 Note: any two acceptable defects spacing requirement ≥20		

5.3 线状缺陷 / Linear Defects

标准 CRITERIA（mm）		判定 DECISION
线宽 W	线长 L	
W≤0.03	/	不计，不可密集 Excluded, but cannot be concentrated
0.03＜W＜0.05	L≤35	
0.05≤W≤0.08	L≤30	7
0.08＜W≤0.10	L≤10	3
W＞0.10	/	按点状标准 According to the dot standard
备注：任两个可接受缺陷的间距要求≥20 Note: any two acceptable defects spacing requirement ≥20		

5.4 面板标准 / Cover Criteria

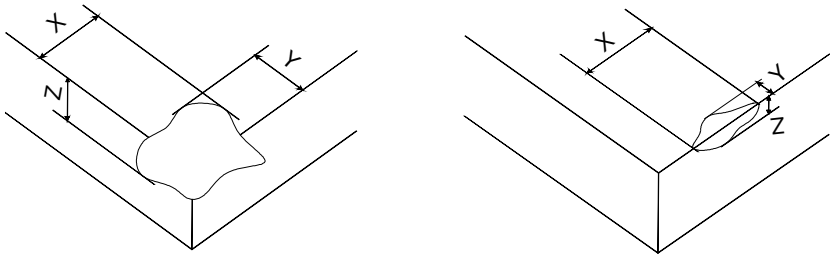
项目 ITEM	标准 CRITERIA（mm）
丝印图案倾斜角度 Logo Printing Tilt Angle	L≤10, A≤3°；10＜L≤20, A≤1.5°
平整度 Flatness	在平面上各方向起翘高度：H≤0.25%, OK; H＞0.25%, NG. The degree (height) of warping accepted in any direction or plane: H≤0.25%, OK ; H＞0.25%, NG. 
BM 丝印区 BM Printing Area	丝印区因划伤造成有明显的漏光现象，不可接受。 Printing area has obvious light-leaking phenomenon caused by scratching is not acceptable.
	丝印针孔/透光：Φ≤0.30 可接受；不计个数，但不可密集。 Printing pinhole/transmission: Φ≤0.30 is acceptable; regardless of the number, but not allowed to be concentrated.
	面板视窗区边缘丝印凸起或锯齿状，宽度不超过 0.2，可接受。 Cover window area edge printing raised or indented, width is not more than 0.2 is acceptable.

	面板丝印内污、暗影，不可接受，可参考限度样板。 Cover printing in the dirt, the shadow, is not acceptable; may refer to limit sample.
丝印 LOGO LOGO Printing	颜色、字体、位置、尺寸符合图纸或样品要求。 Color, font, position, size conform to the requirements of the drawings or samples.
	透光性均匀，参考限度样板。 Even transmission of light; refer to limit sample.
	不可有重影、缺损，参考限度样板。 There shall be no ghosting, defect; refer to limit sample.

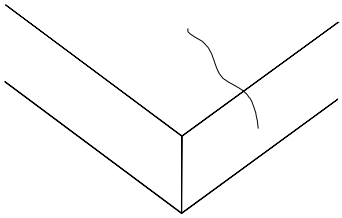
5.5 面板玻璃崩缺 / Cover Glass Chipping

正面边、角崩缺，不允许；
Edge and corner of the front fragment, does not allow;

背面边、角崩缺：X≤0.5mm，Y≤0.5mm 和 Z≤1/2 玻璃厚度，从正面观察不可漏光，每边可接受数量为 3 个，间距要求大于 20mm。
（注：若崩缺位严重影响产品的功能，T/P 属不良品。）
Corner fragment：X≤0.5mm ，Y≤0.5mm and Z≤1/2GT, viewed from the front is light-leaking, acceptable number per side for three, more than 20 mm spacing requirements.
（Remark: If the chipping seriously affects the product's features, T / P is non-conforming.）

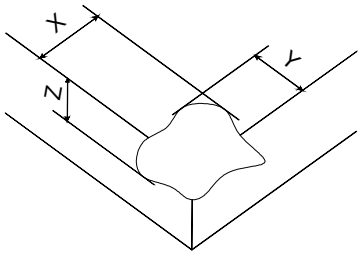


裂纹：T/P 属不良品。
Cracking: T/P is regarded as **defective**.

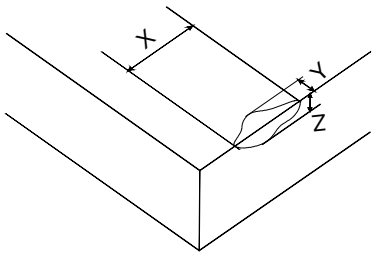


5.6 功能片玻璃崩缺 / Sensor Glass Chipping

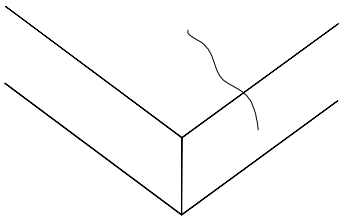
角崩缺：X≤3.0mm，Y≤3.0mm 和 Z≤玻璃厚度，可以忽略。
（注：若崩缺位严重影响产品的功能，T/P 属不良品。）
Corner fragment：X≤3.0mm ，Y≤3.0mm and Z≤GT, it is ignored.
（Remark: If the chipping seriously affect the product's features, T / P is non-conforming.）



边崩缺：X≤4.0mm，Y≤2.0mm 和 Z≤玻璃厚度 ，可以忽略。
（注：若崩缺位严重影响产品的功能，T/P 属不良品。）
Side fragment：X≤4.0mm，Y≤2.0mm and Z≤GT it is ignored.
（Remark: If the chipping seriously affect the product's features, T / P is non-conforming.）



裂纹：T/P 属不良品。
Cracking: T/P is regarded as defective.



5.7 其它:此承认书基本满足产品特性要求，若有其它问题可针对客户实际要求进行协商。
Other：This specification is considered as basic on the products, but details are subject to discussion upon individual customer requirement.

6 信赖性实验 / Reliability Test

●适用范围 / Scope：

1） 以下触摸屏的信赖性测试应放在平板上，在非通电状态下进行。
1）The following touch screen reliability test should be carried out after placing the screen on the plate in a non-powered state
2） 以下触摸屏的信赖性测试应在标准环境（23℃±5℃、65%RH±10%RH 和 860-1060hPa）下进行，除非有单独说明。
2） The following touch screen reliability test should be carried out in standard environment (23℃±5℃、65%RH±10%RH 和 860-1060hPa), unless there are special requirements or conditions otherwise specified.

6.1 环境实验 / Environment Test

6.1.1 高温存储 / Heat Resistance

将产品放置在 70℃持续 240 小时，然后在常温常湿下放置 24 个小时后进行测试。产品满足“4.2 电器性能”、“4.3 机械性能”里的“操作压力”和“4.4 透光率”项目要求。

The requirements in “4.2 Electric characteristics”, “Operation force” of the item “4.3 Mechanical characteristics” and “4.4 Light transparency” shall be satisfied after exposing samples at 70℃ for 240h, and each item should be measured after exposing them in normal temperature and humidity for 24h.

6.1.2 低温存储 / Cold Resistance

将产品放置在-20℃持续 240 小时，然后在常温常湿下放置 24 个小时后进行测试。产品满足“4.2 电器性能”、“4.3 机械性能”里的“操作压力”和“4.4 透光率”项目要求。

The requirements in “4.2 Electric characteristics”, “Operation force” of the item “4.3 Mechanical characteristics” and “4.4 Light transparency” shall be satisfied after exposing samples at -20℃ for 240h, and each item should be measured after exposing them in normal temperature and humidity for 24h.

6.1.3 高温高湿存储 / Temperature and Humidity Resistance

将产品放置在60℃，90%RH持续240小时做一个循环，然后在常温常湿下放置24个小时后进行测试。产品满足“4.2电器性能”、“4.3 机械性能”里的“操作压力”和“4.4透光率”项目要求。

The requirements in “4.2 Electric characteristics”, “Operation force” of the item “4.3 Mechanical characteristics” and “4.4 Light transparency” shall be satisfied after exposing samples at 60℃, 90%RH for 240h for 1 cycle, and each item should be measured after exposing them in normal temperature and humidity for 24h.

6.1.4 冷热冲击 / Thermal Shock

将产品放置在-20℃（30min）⇔ 70℃（30min）下做10个循环，然后待产品常温常湿下放置24个小时后，再取出进行测试。产品满足“4.2电器性能”、“4.3 机械性能”里的“操作压力”和“4.4 透光率”项目要求。

The requirements in “4.2 Electric characteristics”, “Operation force” of the item “4.3 Mechanical characteristics” and “4.4 Light transparency” shall be satisfied after exposing samples at -20℃(30 min) ⇔70℃ (30 min) for 10 cycles and each item should be measured after exposing them in the samples to normal temperature and humidity for 24 h.

6.2 耐久试验 / Endurance Test

6.2.1 引线拉力测试 / Flexible Pattern Heat Seal Peeling Strength Test：

X方向：1000g (水平方向180度剥离)　　X: 1000g (peeling by 180°)

Y方向：500g（朝上方向90度剥离）　　Y: 500g (peeling upward by 90°)

Z方向：150g（垂直于产品与引线方向剥离）Z: 150g (peeling for being vertical with x and y direction)

备注：拉伸速度25 mm/min。 Note: speed 25mm/min.

6.2.2 引线耐弯曲测试 / Flexible Pattern Bending Resistance Test

弯曲半径为 1mm 弯曲次数为 3 次或 3 次以上，满足“4.2 电器性能”项目要求。

Bending 3 times or more by bending radius R1mm.The requirements in the item “4.2 Electric

characteristics" shall be satisfied.

6.2.3 引线耐插拔性 / Flexible Pattern Resistance to Inserting

至少 5 次，产品满足"4.2 电器性能"、"4.3 机械性能"里的"操作压力"和"4.4 透光率"项目要求。

Inserting and removing the FPC from connector at least 5 times. The requirements in "4.2 Electric characteristics", "Operation force" of the item "4.3 Mechanical characteristics" and "4.4 Light transparency" shall be satisfied.

6.2.4 耐冲击试验 / Impact Resistance Test

当用130g，Φ32mm钢球从50cm的高度垂直跌落在产品表面中心一次，玻璃不会损坏。

Using a 130g, Φ32mm ball, that is dropped from a vertical height of 50cm height to the of the product once, the glass is not broken or damaged.

6.2.5 包装跌落测试 / Packaging Drop Test

包装盒面积最大面从 50cm 高度跌落两次（正反面各一次），产品不破损。（注：此项目仅为一般测试，若客户有特殊要求，我们将针对不同厚度的产品进行测试）。

No damage to the product when the biggest side of package is dropped 2 times from 50cm height (once each on upper and lower surfaces).

(Remark: This item only describes standard testing protocol. Testing is carried out in accordance with customer special requirements, and different product structures and thicknesses.)

7 注意事项 / Product Handling and Usage Instructions

投射电容式触摸屏主要由玻璃构成，因此在存储、组装、清洁等各个阶段都应小心处理。产品不可掉落或随意处理，所有工作表面应保持清洁，无灰尘和污垢，以防止产品被刮伤。为避免产品损坏或故障，请遵守以下指示。

Projected capacitive touch screens are composed primarily of glass and as such should be handled with caring during all stages of storage, assembly, cleaning, etc. The product should not be dropped or handled roughly; all work surfaces should be kept clean and free of dust and dirt to prevent scratching. To avoid product damage or malfunction, please adhere to the directions below.

7.1 储存 / Storage

7.1.1 建议将材料存储在温度 23±3℃，湿度 40%~70%RH，并且不超过 6 个月，以避免环境引起的保护膜脱胶，从而导致产品表面污染。

7.1.2 建议在正常环境下（室内，非恒温恒湿），材料的储存周期不能超过 3 个月，以避免环境引起的保护膜脱胶，从而导致产品表面污染。

7.1.3 触摸屏不可与化学物品或酸碱物品接触，以免影响面板功能。触摸屏不可被存储在可以形成冷凝的环境中。

7.1.4 不可将触摸屏直接曝晒在阳光下。

7.1.5 触摸屏应存储在原始包装中。

7.1.1 We suggest the product should be kept at a temperature of 23±3℃ and humidity of 40%~70%RH. The product storage period should not be more than 6 months.

7.1.2 It is suggested to keep the materials no more than 3 months in normal conditions (indoors, normal heat and humidity conditions).

7.1.3 Touch panel should be kept away from chemicals such as acidic or alkaline products, as the damage occurring from contact could affect touch panel function. Touch panels should never be stored in an environment where condensation can form.

7.1.4 Do not store a touch panel in direct sunlight.

7.1.5 Touch screens should be stored in original packaging.

7.2 清洁 / Cleaning

7.2.1 若要清洁触摸屏，请尽量避免使用诸如强酸或强碱之类的任何化学溶剂。

7.2.2 若要清洁触摸屏，我们建议使用中性的清洁剂或异丙醇等。

7.2.3 若要清洁触摸屏，应使用软布以避免擦伤屏体。

7.2.1 When cleaning the touch panel, refrain from using any kind of strongly acidic, alkaline or organic chemical solvent.

7.2.2 In case the panel requires cleaning, the use of neutral detergent or isopropyl alcohol is suggested.

7.2.3 When cleaning the touch panel, always use a soft cloth to avoid abrasions.

7.3 取放与组装 / Handling and Assembly

7.3.1 在处理触摸屏时，建议带上手套，以避免污染造成产品上指纹、污垢或颗粒，并且避免产品尖锐的边缘对手造成伤害。

7.3.2 在处理触摸屏时，请捧住玻璃的边缘，并将 sensor 面朝上，以避免 sensor 被刮伤或弄脏。

7.3.3 在装配时应尽量避免与可视区域接触，以免影响产品的透明度。

7.3.4 在装配时，不要使用过大的力来弯曲或扭曲面板，这可能导致触摸屏变形、破裂或损坏。

7.3.5 对于 FPC 的作业时，应避免过大的拉力、应力或张力，以防止损坏或产品缺陷。

7.3.6 一旦从原来的包装中取出，触摸屏就不可堆叠，否则可能导致产品被划伤。

7.3.7 不要在触摸屏上堆叠重物。

7.3.1 When handling the panel, gloves are recommended both to avoid fingerprints, dirt or particles from adhering to the glass and also to avoid injury to the handler from sharp edges.

7.3.2 When handling the panel, hold it by the edge of the glass with the sensor facing upwards in order to avoid the sensor becoming scratched or dirty.

7.3.3 The panel should be handled by its edges and contact with the viewing area should be avoided in order to avoid affecting product transparency or display transmission.

7.3.4 When assembling the glass panel, do not use excessive force to bend or twist the panel; this may result in the panel becoming deformed.

7.3.5 When handling the FPC or COF, excessive pulling force, strain or tension must be avoided in order to prevent damage or product defects.

7.3.6 Once removed from the original package, touch screens are not to be stacked. The edges may cause scratching.

7.3.7 Do not stack heavy objects on the touch screen.

7.4 操作 / Operation

7.4.1 触控面板必须在稳定的环境状况下被使用，环境状态的突然急遽变化有可能会导致触控面板的机能性失效的发生。

7.4.2 为确保触控面板的功能得以稳定有效的发挥呈现，请务必确认系统的接地回路与电源供应器的接

地回路被正确的衔接与执行（与大地作共地的接地回路是最佳的设计）。

7.4.3 触控面板在操作的过程中，请勿任意插拔触控面板与系统端的界面连接器。

7.4.4 触控面板在操作的过程中，请务必禁止与避免使用任何尖锐或硬质物体去敲击碰触。

7.4.1 The panel must be operated in a stable environment; abrupt change of the environmental conditions may cause the malfunction of the panel.

7.4.2 In order to guarantee stable performance of all functions of a touch panel, please make sure that system is grounded or a power adapter is connected correctly to ground loop (Connection to earth ground is suggested).

7.4.3 Do not insert or remove the interface connector while the touch panel is operating.

7.4.4 Please avoid any sharp edged or hard objects hitting the touch panel when in operation.

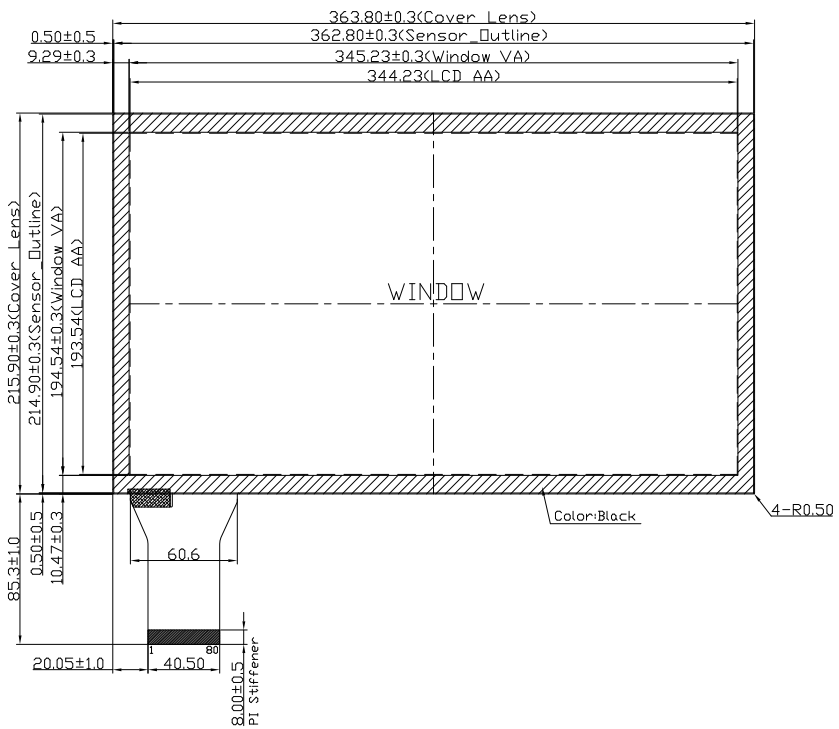
8 附件 / Attachment

8.1 工程图 / Engineering drawing

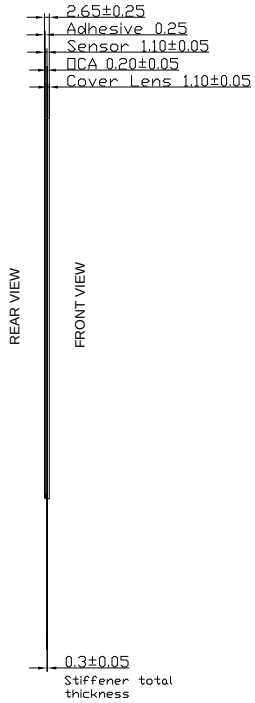
MARK	HISTORY	NAME	DATE
1			
2			
3			
4			
5			

MARK	HISTORY	NAME	DATE
6			
7			
8			
9			
10			

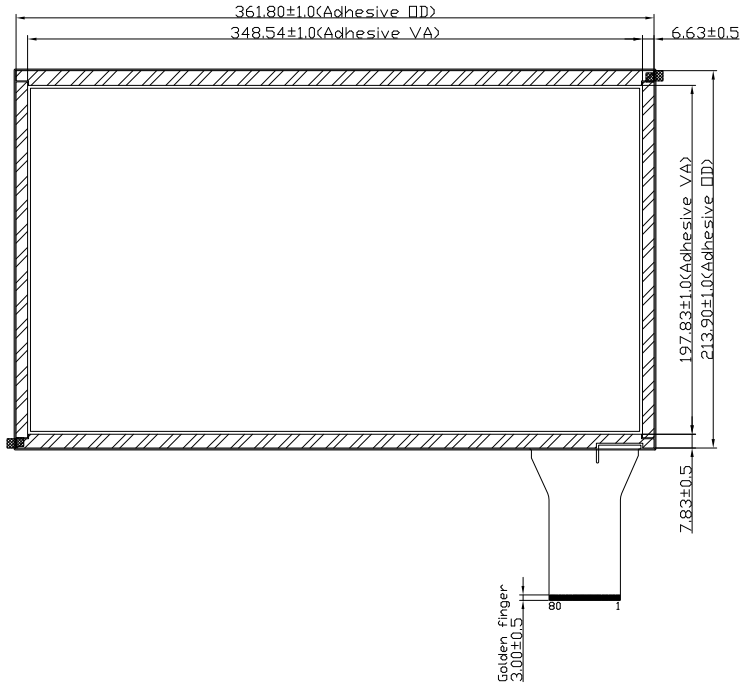
FRONT VIEW



SIDE VIEW



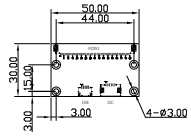
REAR VIEW



PIN ASSIGNMENT	
USB	
Pin	Name
1	VDD
2	D-
3	D+
4	GND
5	GND

Notes:

1. Operating Temperature:-20℃~+70℃
; Storage Temperature:-20℃~+70℃
。2. Hardness≥6H。
3. Transparency≥85%。
4. Unspecified Tolerance:±0.30。
5. ROHS Compliance。



CONTROL BOARD
T=MAX 4.6

HCT1562W-A2A				Customer Part No.	SHEET	UNIT	SCALE	ver.1
				15.6 inch	A4	mm	1:1	
DESIGN	murphy	DATE	2018.07.12					
CHECK		DATE						

规　　格　　书

PRODUCT SPECIFICATION FOR INFORMATION

客户名称
Customer Name:

产品型号
Customer Type: TPC80W46

机种编号
Model NO.: TPC1562SD

日期
Date: 2017-8-23

设计 **Design by**	核准 **Check by**	客户确认 **Customer approval**
朱洁婷	何鸿飞	
2017-8-23	2017-8-23	

1．支持操作系统 Supports OS：

Windows(Embedded/CE/XP/2000/Vista/7/8/10)

Linux

Android

MAC

QNX

2．规格 Specifications

电路板尺寸 Circuit Board Dimension	50mm × 30mm
板层数 Number of Layers	4 Layers
板厚 Thickness	1.6mm
通道数 Channels of Panel	(Max) RX：44 TX：28
输入电压 Input Voltage	3.5V~5.5V,Typical 5V
使用温度 Operating Temperature	-20℃ - 70℃
储藏温度 Storage Temperature	-20℃ - 70℃
相对湿度 Relative Humidity	95% at 60 ℃, RH Non-condensing
通过接口 Interface	USB:1.1 Full Speed / I2C
最大分辨率 Max Resolution	4096*4096
精度 Precision	≤2.5mm
两点分辨距离 Two points separate distance	≥15mm(pitch of finger center)
触摸点数 Touch point	1~10 points
功耗 Power consumption(mA)	Active Mode:About 50mA
报点率 Report rate(points/sec)	≥ 120Hz
反应时间 Response time	<15ms

3．引脚定义 PIN ASSIGNMENT：

FCON1				JP1 USB		JP2 IIC	
Pin	**Name**	**Pin**	**Name**	**Pin**	**Name**	**Pin**	**Name**
1	Shielding(TX0)	33	GND	1	5V	1	RST
2~29	TX1-TX28	34	Shielding(RX0)	2	D-	2	INT
30	NC	35~78	RX1-RX44	3	D+	3	SCL
31	Shielding(TX29)	79	NC	4	GND	4	SDA
32	GND	80	Shielding(RX45)	5	GND	5	3.3V
						6	GND

4．图纸 Drawing：