

萬達光電科技股份有限公司

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PRODUCT SPECIFICATIONS

產品規範書

Customer (客戶): 5 吋以下
Model (型式): _____
Mode (種類): Projective Capacitive Touch Panel
Date (日期): Apr. 14,2011
Version (版本): 待編

Customer Approval

客戶簽認

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Approve 確認	Review 審訂	Preparation 製表

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SPECIFICATION REVISION RECORD

規格變更記錄

Customer [客戶名稱]:

Date [發行日期]: Feb. 11, 2011

Customer NO. [客戶編號]:

Model [型式]:

NO. [項次]	Version. [版本]	Date [變更發行日期]	Summary of Changes [變更內容摘要]	Page [變更頁碼]

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Dimension Drawing [尺寸圖]



01. Circumscription The specification is for Projected Capacitive Touch Panel modules.
 [範圍] [此規格適用於投射電容式觸控屏幕]

02. Features
 [特性]

	Item [項目]	Specifications [規格]
(1)	Type [型式]	Projective Capacitive [投射電容式]
(2)	Input Mode [操作模式]	Finger [手觸]
(3)	Connector [連接方式]	FPC

03. General Specification
 [規格總則]

	Item [項目]	Specifications [規格]
(1)	Frame Size [外框尺寸]	356.40 ± 0.30 X 273.40 ± 0.30 mm
(2)	Viewable Area [可視區]	306.00±0.20 X 230.00±0.20 mm
(3)	Active/Precision Area [動作區]	308.70 ± 0.20 X 232.70 ± 0.20 mm
(4)	Total Thickness [總厚度]	2.50 ± 0.30 mm
(5)	Tail Length [出線長度]	35.00 ± 3.00 mm
(6)	I/O Channel [出線 pin 腳數]	X=39pin / Y=31pin

04. Environmental Characteristics
 [環境特性]

	Item [項目]	Specifications [規格]	
		Temperature [溫度]	Humidity [濕度] (Non Condensing) [不可結露]
(1)	Operation [操作]	-10°C ~ +60°C	70%RH or less
(2)	Storage [儲存]	-20°C ~ +70°C	90%RH or less

Note: Testing environment is under normal atmospheric pressure.
 [註:於正常的 1 大氣壓下]

※ When the ambient temperature is above 65°C, the humidity is allowed to be below 50%RH .
 [65°C 以上高溫環境時, 濕度允許在 50%RH 以下]



05 Optical Characteristics

[光學特性]

Item [項目]		Specifications [規格]
(1)	Transparency [透光度]	>80%

※ measured by BYK-Gardner

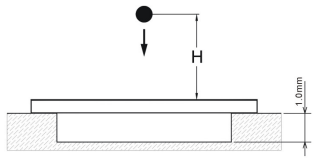
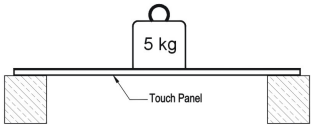
06 IC SPEC

[IC SPEC]

Item [項目]		Specifications [規格]
(1)	IC SPEC [IC 規格]	Reference IC SPEC [參考附件 IC 規格]

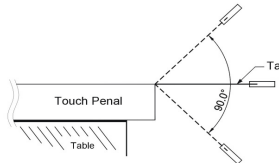
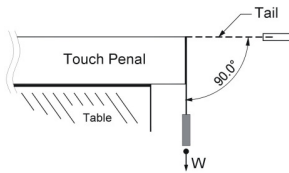
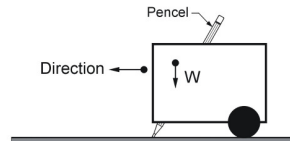
07 Mechanical Characteristics

[機械特性]

Item [項目]	Condition [條件]	Specification [規格]
(1)	Operating Force [作動力] Finger \leq 10g [手觸 \leq 10g]	Satisfy- 1. Optical Characteristics. 2. Electrical Characteristics. [符合] 1. 光學特性 2. 電子特性 Appearance- 1. Ignore test area 2. No mechanical damage. [外觀-] 1. 忽略撞擊區 2. 不能破損
(2)	Impact [撞擊] 25.0 ϕ DIA. Steel Ball/67g Height=30cm / 1 time, Impact at center area [25 ϕ /67g 不銹鋼球; 高度=30cm/中央區域 撞擊 1 次] 	
(3)	Static Load [靜態承重] 5000g within 10cm ϕ area for 30sec [5000g 置於 10cm ϕ 內, 靜置 30 秒] 	

07. Mechanical Characteristics
[機械特性]

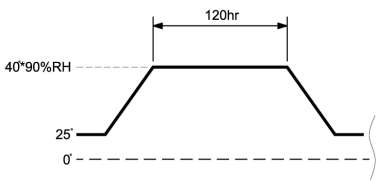
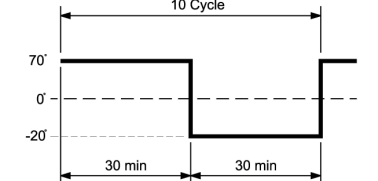
Item [項目]	Condition [條件]	Specification [規格]
(4) Hardness [硬度]	7H pencil, pressure 750g/45° [鉛筆 7H, 壓力 750g/45° (ASTM D3363)]	Satisfy- 1. Optical Characteristics. 2. Electrical Characteristics. [符合 1. 光學特性 2. 電子特性]
(5) Tail Peeling [剝離]	500g/cm by vertical 90° for 30sec [500g/cm, 垂直 90°, 靜置 30 秒]	
(6) Tail Bending [繞折]	90° 10 times left & right [90° 角, 左右來回 10 次]	



Appearance-
1. Ignore test area
2. No mechanical damage.

[外觀-
1. 忽略撞擊區
2. 不能破損]

08. Reliability
[信賴性]

	Item [項目]	Condition [條件]	Specification [規格]
(1)	Constant Temperature /Humidity [恆溫恆濕]	40°C X 90%RH, 120 hrs and normalized for 24 hrs [40°CX90%RH, 120 小時, 回常溫 24 小時後始可測試] 	Satisfy- 1.Electrical Characteristics. [符合 1.電子特性]
(2)	Heat Cycle [高溫循環]	70°C /120 hrs and normalized for 24 hrs [70°C /120 小時, 回常溫 24 小時後始可測試]	
(3)	Cold Cycle [低溫循環]	-20°C /120 hrs and normalized for 24 hrs [-20°C /120 小時, 回常溫 24 小時後始可測試]	
(4)	Thermal Cycle [冷熱循環]	-20°C ~70°C [30 min./cycle] *10 cycles and normalized for 24 hrs [-20°C ~70°C, 每循環 30 分鐘, 共 10 次循環, 回常溫 24 小時後始可測試] 	

09. Function test
[功能測試]

Sensor
Function Test
[功能測試]

Test Method :Use $\phi 8$ copper stick to draw the square diagonal line.

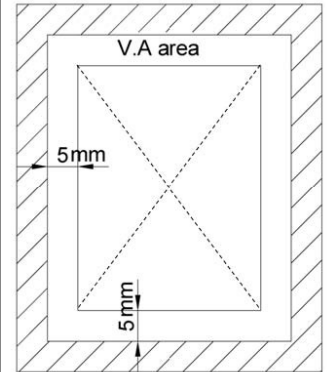
[測試方法: 手持 $\phi 8$ 銅棒在面板上畫出如右圖中四方型及對角線]

Test Area : 5mm inward view area.

[測試區域: 由可視區往內5mm]

Disapproval Criteria : It is NG when we see the off-line or jumping out spec shift.

[規範標準: 如有偏移或跳線之現象, 判定為NG]



10. Appearance Inspection
[外觀檢查]

- (1) The inspection is to be performed with two 20W(1800±500 LUX) fluorescent lamp lighting from the back or side. The panel is to be placed 30cm away from eyes. (Figure 11-1).

[檢測始用之燈光為二盞 20W(1800 ± 500 LUX) 白熾燈光, 並於面板後側或上側照射, 檢測時須放置在離眼睛 30cm 處(Figure11-1)]

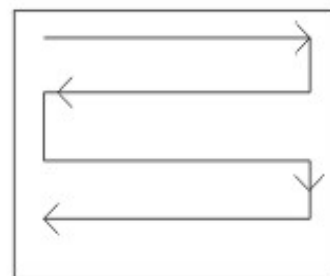
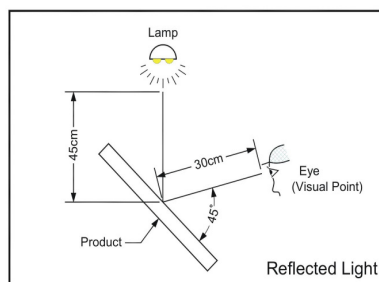


Figure 11-1

- (2) Please refer to Appendix I : Appearance Specification.

[(4)外觀規格請詳見(附註 1)]

11. Attention of Mounting Condition

[裝機注意事項]

(1)	<p>The gasket support of touch panel must be designed on the outside of viewable area, as well as to avoid pressing on touch panel accidentally. The enclosure must be designed with enough clearance of panel surface. To avoid accidental actuation error on touch panel, please reserve sufficient space between the touch panel surface and the bezel. (Figure 12-1)</p> <p>[請將固定觸控屏用的支撐體(support)設計於可視區(Viewable area)之外。為避免不小心碰到觸控屏而產生動作，請預留空間於面板與機體外殼之間] (圖示 12-1)</p>
(2)	<p>We recommend using a support made with elastic material.</p> <p>[建議使用彈性物質製成的支撐體]</p>
(3)	<p>The edge of touch panel may be conductive. Don't touch it with metal objects after mounting.</p> <p>[觸控屏面板四周有可能會導電，安裝時後請勿與其他金屬物質接觸]</p>
(4)	<p>Please take notice of the grounding of power while mounting the touchscreen, otherwise it may have unstable situation.</p> <p>[電容式觸控螢幕的組裝必須注意電源的接地，可能因外界干擾會有作動不穩定的情況發生]</p>
(5)	<p>Please do not pull on flex tail during assembly. Do not bend at 90° and each bend angle should be no less than R:5m/m.</p> <p>[組裝時不可拉扯 TAIL 訊號線，且不可直接彎折 90° 度每處彎曲處都需保持最小 R 角 (R=5m/m)]</p>
(6)	<p>During assembly, the touch panel must be securely affixed onto the LCD panel to prevent displacement of the touch panel due to outside force pressing on touch screen or bezel/case.</p> <p>[電容式觸控面板與 LCD Panel 組裝時，必須確實黏貼固定，不可因外力按壓觸控面板或機殼，而造成觸控面板晃動偏移。]</p>
(7)	<p>Retain at least 3.0 mm clearance between touch panel and display module during installation.</p> <p>[安裝電容式觸控面板與 LCD Panel 之間間隙至少需有 3.0mm 以上的距離。]</p>

Projective Capacitive Touch Panel Assembly Guide + Touch Windows G/F/F

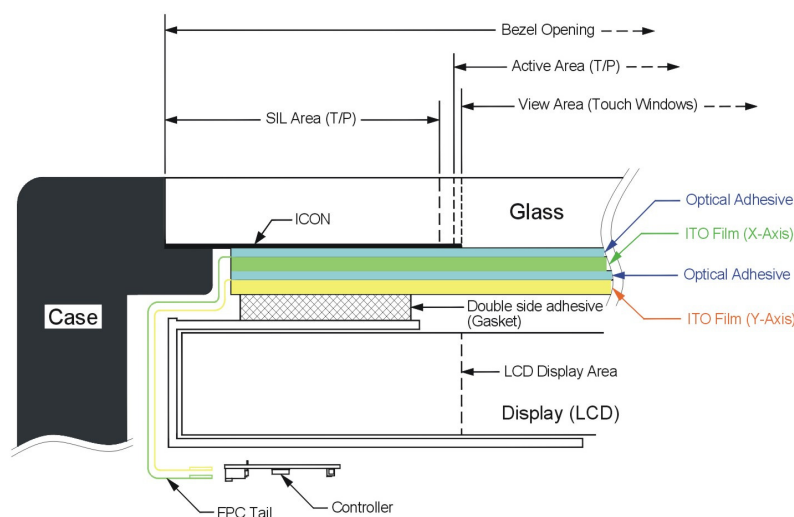


Figure 12-1



12. Caution

[注意事項]

Storage [儲存]	<p>(1) Store panel under the temperature and humidity range pre-specified. Direct sunlight exposure or piling should be avoided. [儲存要注意溫/濕度條件，且不可直接暴露於陽光下，或堆疊造成直接加壓面板]</p> <p>(2) Ship method: (a) must use legal couriers to transport products, (b) fragile products; beware of vibration and dropping during transit. [搬運方法 (a)需顧用合法搬運公司進行貨物搬運 (b)產品為易碎品,搬運時需注意震動、掉落]</p> <p>(3) Stacking method: (a) based on standard air/ocean freight regulation, (b) pallet use recommended for stacking, (c) monitor stack weight and height to prevent damage to bottom stack. [堆疊方法 (a)依空運或海運堆放標準 (b)建議利用棧板進行堆疊作業 (c)注意堆疊重量及高度,不可造成最下層包裝箱發生變形或破損]</p>
Unpack [拆裝]	<p>(1) Unpack the box with the printed red arrow pointing up. [注意檢查包裝箱已發現來貨外箱已有嚴重變形或破損時,應立即拍照佐證,以避免損壞]</p>
Handling [握持]	<p>(1) Use clean sacks or glove to prevent leaving fingerprints and/or stains on the panel. Extra attention and carefulness should be taken while handling the glass edges. [配戴清潔的指套、手套、口罩, 以避免造成指紋、髒污或不小心被玻璃邊緣割傷]</p> <p>(2) Avoid touching the viewable area before installation/integration. [安裝組合時, 避免直接接觸可視區]</p> <p>(3) Hold the panel instead of the tail at all time. [拿取面板時, 不可直接拿取 tail 部份]</p>
Cleaning [清潔]	<p>(1) Use neutral detergent or isopropyl alcohol on a clean soft cloth to clean the panel surface. [使用乾淨且柔軟的布, 沾中性清潔劑或酒精進行清潔]</p> <p>(2) Prevent using any kind of chemical solvent, acidic or alkali solutions. [不能使用化學溶劑或酸鹼液進行清潔]</p> <p>(3) Foreign objects and prints that can be wiped off are not regulated under the specification, thus can be ignored. [表面可擦拭及排除的異物及異紋並不列入判定規範內,可被乎略]</p>



<p>Installing and Assembling [組合與裝配]</p>	<p>(1) Excessive force or strain to the panel or tail is prohibited. [注意避免加壓或拉扯面板及 tail]</p> <p>(2) Retain at least 3.0 mm clearance between touch panel and display module. [最少保留 3.0mm 的空間於面板及顯示器之間]</p> <p>(3) Design gasket or cushion pads around the edge of the panel to segregate water and/or dust contamination. [在設計機構時，注意四周邊緣需有緩衝墊，以避免滲水或聚集灰塵]</p> <p>(4) Maintain a minimal 5R when bending tail to prevent dead fold or fold mark. [組裝時應保持最小 5 R 的折彎尺寸，並避免死折或有折痕現象]</p> <p>(5) Flaws in customer module design may cause functionality issues after assembly. [客戶端設計模組若有疏失時，會造成觸控屏組裝後，產生變形或破損現象會影響正常觸控功能]</p>
<p>Package Drop [包裝測試]</p>	<p>(1) Drop the carton one time from a height of 65cm height to the ground on all 6 surfaces, 3 ridges and 1 corner. After the test, no cracks and chips on the glass and scratches on the film surface are allowed. [從 65 厘米高度跌落到地面，六個面、三個邊及一個角各 1 次。經過測試，不允許任何裂紋和缺角在玻璃上和劃傷在薄膜表面上。]</p>
<p>Operating [操作]</p>	<p>(1) Touch the panel with your finger or stylus only to assure normal operation. Any sharp edged or hard objects are prohibited. [應用手指或專用觸控工具，不能使用尖銳、堅硬的物體書寫輸入]</p> <p>(2) Operate the panel in a steady environment. Abrupt variation in temperature and humidity may cause malfunction of the panel. [急遽的溫/濕度變化會有結露現象，易造成面板功能失效，所以穩定的環境條件是必要的]</p> <p>(3) Avoid applying excessive activation force or sudden impact on the panel surface. [避免應用過大觸動力或瞬間衝擊面板表面]</p> <p>(4) Avoid high voltage and/or static charge. [避免高壓與靜電]</p>
<p>Others [其他]</p>	<p>(1) Keep the panel surface clean. Prevent any kind of adhesive applied on the surface. [請保持表面清潔，不要貼膠帶於面板上]</p> <p>(2) HIGGSTEC has the right to change the materials and/or specifications. [萬達光電保有變更規格及材料的權利]</p>



13. Warranty

[保固]

(1)	<p>HIGGSTEC offers a 2-year warranty on all HIGGSTEC products. HIGGSTEC guaranty provide for repair and replacement without any charge during this period.</p> <p>HIGGSTEC reserves the right in its sole discretion to determine the defects received, and will take the responsibility if there is any defect or damage.</p> <p>[除了下列 4 點所述外，萬達光電所生產製造的產品保固期限為 2 年，若判定為萬達光電之責任，則產品更換。萬達光電保留判定責任歸屬之權益]</p>
(2)	<p>Limited warranty does not cover the following situations:</p> <p>[有限度保固，不包括下列幾點]</p> <p>【Notice】</p> <p>HIGGSTEC is not responsible for following situation:</p> <ol style="list-style-type: none">1. Damages caused by improper handling from clients, such as the shipping period or manufacturing processes. [在客戶的製程或運輸中,因客戶自身疏忽所造成對產品的傷害及破損]2. Damages caused by either natural disaster or human factors after receiving the products. [在客戶收到萬達光電之產品後,因為天災人禍所造成的傷害及破損]3. Damage caused by self-repairs, and modifications or disassembling of HIGGSTEC products from clients without prior notice. [沒有知會萬達光電共同討論，而自行變更、維修、拆卸產品所造成的傷害及破損]4. Damage caused by user error; Failing to follow normal operation procedures or using proper tools. [客戶端於觸控屏使用操作上,該使用正確的動作及工具操作觸控屏,因客戶未依正確操作使用造成產品傷害及破損]5. Product serial numbers and/or labels must remain intact or clearly visible for tracking purpose; otherwise, warranty is voided. [產品條碼需保留完整清晰以利追溯，其不完整時故無法保固]



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14. Appendices
 [附註]

Item [項目]	Content [內容]
Appendix I [附註一]	Appearance Specification [外觀檢查規格]



Appendix II [附註一]

Appearance Specification [外觀檢查規格]

	Item [項目]	Specification [規格]
1.	Dot Contamination [點污染]	(1) $D \leq 0.5\text{mm} \rightarrow \text{OK}$ (2) $0.5\text{mm} < D \leq 0.8\text{mm} \rightarrow \text{Acceptable number} \leq 5$ [不良數 ≤ 5] (3) $1.0\text{mm} < D \rightarrow \text{NG}$
2.	Linear Contamination [線狀異物/毛屑]	(1) $W \leq 0.1\text{mm}$ 、 $L \leq 5\text{mm} \rightarrow \text{OK}$ (2) $0.1\text{mm} < W \leq 0.1\text{mm}$ 、 $L \leq 5\text{mm} \rightarrow \text{Acceptable number} \leq 5$ at minimum distance of 5mm [不良數 ≤ 5 且距離 $> 5\text{mm}$] (3). $0.1\text{mm} < W$ 、 $L > 5\text{mm} \rightarrow \text{NG}$
3.	Cracks and Chips (Surface) [玻璃表面破損、缺角]	(1) $W \leq 0.1\text{mm}$ 、 $L \leq 5\text{mm} \rightarrow \text{OK}$ (2) $0.1\text{mm} < W \leq 0.3\text{mm}$ 、 $L \leq 5\text{mm} \rightarrow \text{Acceptable number} \leq 5$ at minimum distance of 5mm (3) $0.3\text{mm} < W$ 、 $L > 5\text{mm} \rightarrow \text{NG}$

<Endorse> 【備註欄】

1. 所有外觀不良，只要超出 AA 區，均忽略不計。

【除玻璃破損、缺角、邊緣瑕疵、裂縫、刀傷問題，依成品外觀檢驗規範進行檢驗】

All cosmetic defects are not accounted if found outside Active Area.

(except for glass breakage, corner flaw, edge flaw, crack, etc. please follow Appearance Inspection criteria upon inspection)

2. **D**=Diameter=直徑 / **W**=Width=寬度 / **L**=Length=長度。

3. Tail 允許輕微折痕，但不可有斷裂狀況。

Slight bend mark is allowed on the tail; crack or tear is not allowed.

4. 鍍膜瑕疵若為透明請依 Particle Spots 規格判定。

Flaws found on coating if transparent, please follow Particle Spots specification.

