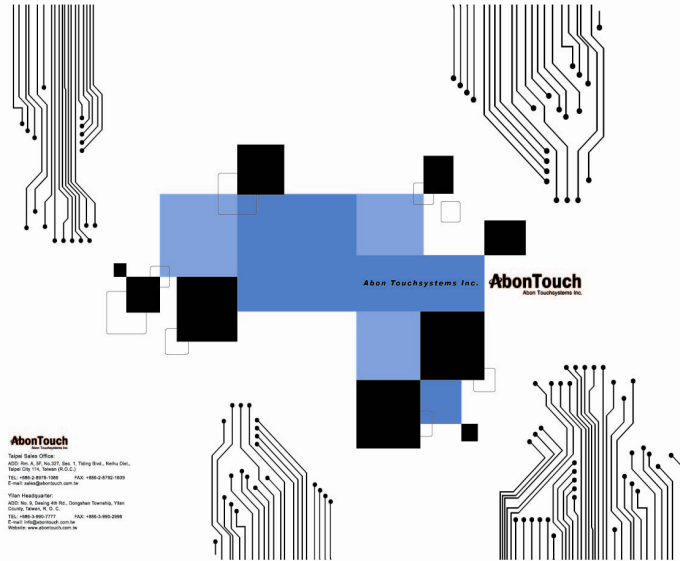


Milestone

- 2005/11 Abon Touchsystems Inc. founded.
- 2006/08 Factory production line complete.
- 2006/08 Launch mass production of Film/Glass 5-Wire Resistive & Surface Capacitive Touch Panel.
- 2006/09 CE, FCC & RoHS Certification.
- 2007/03 Factory Grand Opening Ceremony.
- 2007/08 Achievement of ISO 9001:2000 certification.
- 2007/08 Laminated Robust 5-Wire Resistive Touch Panel developed.
- 2007/10 Anti-EMI Solution for 5-Wire Resistive Touch Panel developed.
- 2007/10 Attended 2007 "Taiwan Autumn Taipei Trade Show".
- 2007/12 Achievement of ISO 14000 Certification.
- 2007/02 ERP Officially Launch.
- 2009/04 DYNAMIC Invested 100% in Abon Touchsystems Inc.
- 2010/10 Develop 5-Wires Resistive Touch Windows (bezeless).
- 2010/10 Develop small- and medium-sized projective capacitive.
- 2011/06 2011 Computex Taipei.
- 2011/10 Develop large-size (15" to 32") projective capacitive.
- 2011/11 The 7th China (Shenzhen) International Touchscreen Exhibition 2011.
- 2012/02 Develop a full-size 10-touch projective capacitive.
- 2012/05 The success research and development support the Win8 projective capacitive touch panel.

AbonTouch
Abon Touchsystems Inc.

AbonTouch
Abon Touchsystems Inc.

AbonTouch
Abon Touchsystems Inc.


Introduction

Abontouch was established in November 2005, mainly engaged in manufacturing and sales of projective capacitive touch sensor and 5 wire resistive touch panel. Utilizing the production process of high temperature technology touch sensor, complex in low-temperature process in functionally durability and lack of reliability of weather resistance. High-temperature process technology makes its long product life, high quality, and proved advantage of good weather resistance. It has been highly appreciated in many market cases at all kind of applications. As our research and development of advanced innovation technology continued in progress which leads a global layout in future.

Basic Profile


Date of establishment: November, 2005
 President/CEO: Ku Min Yu
 Vice President: TS Chang
 Employee: 210
 Capital: Over USD \$ 7 million
 Company and factory: Xian Long Ta Industrial Park
 Land area: 30,000sq
 Products: Projective Capacitive Touch Panel
 5-Wire Resistive Touch Window
 8-Wire Resistive Touch Panel
 Certificate: ISO9001 / ISO14001 / RoHS Compliant / CE / FCC

IPC Culture Core Competency




Investor Intro: DYNAMIC Electronics Co., Ltd.

Founded 1988
 IPO 2009 on NYSE (NYSE: DMND)
 Business PCB Manufacturer
 Capitalized 100% US\$1.7
 Annual Revenue US\$ 220 Million US\$D
 Highly Country in World 100FT in China Plant
 2006 ISO-FT in Taiwan Plant



Advantage

- With an excellent technical/developmental special equipment and high-level R&D, Abontouch always able to provide customers quality & sufficient quantity / fast "turnover" need. It is an commitment to high-end technology based product in all applications.
- Customerized Equip
- High Temperature Process Equipment
- Processing facilities
- High-precision Production Capacity
- Provide customers the best human-machine interface service
- Comprehensive O&M services



PRODUCT SPECIFICATIONS

產品規格書

Model No. (型號) : TPM-15.6

Mode (種類) : Projected Capacitive Multi-Touch Panel

No.9, Desing 4th Rd., Dongshan Township,
 Yilan County 26950, Taiwan
 台灣 (26950)宜蘭縣冬山鄉德興四路9號
 ten:021-51601623-808X806

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RECORD OF REVISIONS

變更紀錄

客戶名稱:		Model No:	TPM-15.6	
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]
1	C01	2011.05.11	First Draft [第一版]	
2	C02	2012.04.02	全面性改版，修正排版、新增項目 02. 特性: 新增支援點數 04. 產品尺寸: 新增 3-4 總厚度、3-6 基板種類，刪除原 3-7 重量 07. 電子特性: 修正 7-2 電性資訊，新增 7-4 敏感度 新項目: 03. 操作系統、10. 靜電測試、13. 注意事項、15. 包裝資訊	1~11 page
<Remarks> [備註欄]				

01. Scope[範圍]

This specification is applied to Cypress ODM manufacturer

02. Features[特性]

Item [項目]		Specifications [規格]
2-1	Type [型式]	Projected Capacitive Multi-Touch Panel [電容式多點觸控面板]
2-2	Input Mode [操作模式]	Multi Finger [手觸] Stylus [電容筆]
2-3	The closest distance between 2 points [兩指間最小距離]	12mm
2-4	Touch Point [支援點數]	MAX: 10 point [最多 10 點]

03. Operating System [操作系統]

OS	Version 版本]	Interface [通訊介面]
Windows	Windows 8 Windows 7 Windows Vista,XP/2000, 9x/ME Windows CE 2.12/3.0/.net/5.0/6.0 Windows Embedded Windows XP Tablet PC edition	USB / RS232
Linux	Mandrake (Mandrake 9.1/9.2/10, Mandriva 2005, Mandriva 2006) Red Hat (7.3/8.0/9.0) Fedora (Core I / II / III / IV / V / VI) Yellow Dog (3.X) SuSE (9.2/9.3/10/10.1) Ubuntu (5.1/6.06) Debian (3.1, Kernel 2.4)	USB / RS232 (up to Kernel 2.6.x)
	Android 4.0 – Google Moblin V2/Meego – Intel	USB / RS232 / I2C
Mac	Mac OS9, Mac OS X (IBM, intel CPU)	USB
QNX	QNX RTOS v6.3	USB / RS232

04. Dimensions [產品尺寸]

Item [項目]		Specifications [規格]
3-1	Screen Size [螢幕尺寸]	15.6"
3-2	Frame Size [框尺寸]	228.00 ± 0.20 373.00 ± 0.20 mm
3-3	NAMEPLATE [可視區]	194.00 ± 0.20 345.00 ± 0.20 mm
3-4	Total Thickness [總厚度]	1.40 ± 0.20 mm
3-5	Substrate thickness [基板厚度]	1.1 T
3-6	Substrate Material [基板種類]	Chemical Strengthen
3-7	Resolution [解析度]	4096*4096 dot

05. Environmental Characteristics [環境特性]

Item [項目]		Specifications [規格]	
		Temperature [溫度]	Humidity [濕度] (Non Condensing) [未凝結]
5-1	Operation [操作]	-30°C ~ +70°C	20%~90% RH at max 50°C
5-2	Storage [儲存]	-40°C ~ +80°C	20%~90% RH at max 50°C
Note: All terms under 1 atmosphere. [註:於正常的 1 大氣壓下]			

06. Optical Characteristics [光學特性]

Item [項目]		Specifications [規格]
6-1	Transparency [透光度]	≥ 90% (measured by BYK-Gardner at 550nm, and the test method accorded to ASTM D1003)

07. Electrical Characteristics [電子特性]

7-1 Absolute Maximum Rating [最大輸入電壓範圍]

Item [項目]		Specifications [規格]
7-1.1	Touch Panel Power Voltage [TP IC 供應電壓]	D.C. +5V (50mA typical,50mV peak to peak maximum ripple and noise)

7-2 Electrical Characteristics [電性]

Item [項目]		Specifications [規格]	Condition [條件]
7-2.1	Touch Panel Power Supply [TP IC 電源供應電壓]	3.5 V~5.5V	VDD-5V, Touch Panel In Normal Operation Condition [供給 5V 的電於 TP 時]
7-2.2	Touch Panel Power Supply current at Normal Operation Mode [TP IC 於一般動作耗電流]	MAX 60mA	
7-2.3	Touch Panel Power consumption [TP IC 電源消耗功率]	MAX 300mW	

7-3 Pin Assignment [訊號內容]

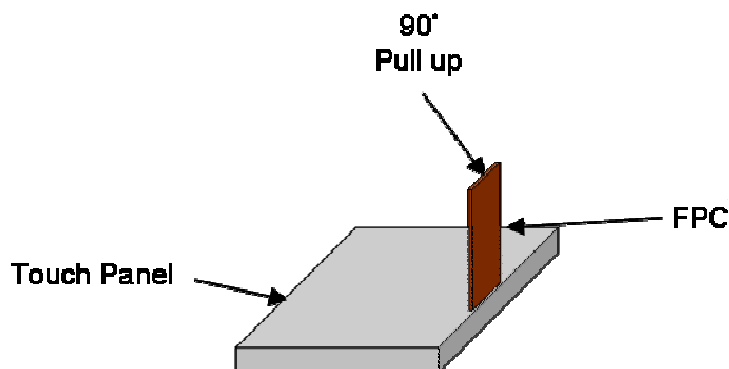
CONNECTOR PINOUT	
PIN NO.	DESIGNATION
1	VCC
2	D-
3	D+
4	GND

7-4 Chattering time [作動時間]

Item [項目]		Specifications [規格]
7-4.1	Report rate(points/sec) [每秒報點率]	>100 Hz
7-4.2	Response time [反應時間]	Max : 25 ms
Note : Report rate will vary by channel number, cover thickness and other parameters. [註: 基板厚度和其他參數會影響報點率]		

08. Mechanical Characteristics [機械特性]

Item [項目]		Specification [規格]
8-1	FPC [連結線] Peeling [剝離]	>600g by 90 degrees ,speed 25mm/min [>600g , 90°, 拉伸速度 25 mm/min]

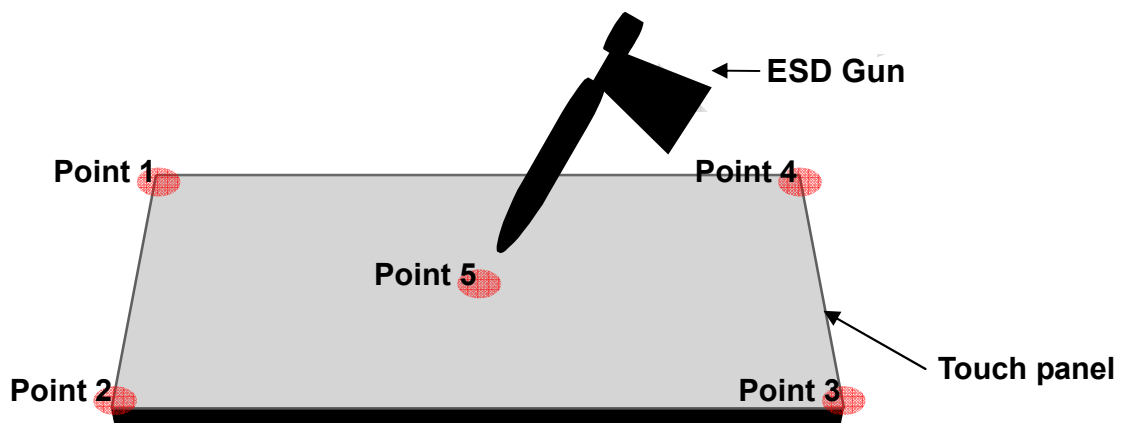


09. Reliability [可靠度]

Item [項目]		Specification [規格]	Condition [條件]
Panel [螢幕區]	High temperature /humidity [恆溫恆濕]	60°C / 90%RH, 240 hrs, allow panel stays in normal environment for 12 hrs [60°C /90%RH 240 小時，回常溫 12 小時後始可測試]	Reliability test may cause the film puffed yet the electric characteristic stays intact. Satisfy of Item 6-1 [符合項目 6-1]
	High temperature [高溫]	80°C /240 hrs allow panel stays in normal environment for 12 hrs [80°C /240 小時，回常溫 12 小時後始可測試]	
	Low temperature [低溫]	-40°C /240 hrs allow panel stays in normal environment for 12 hrs [-40°C /240 小時，回常溫 12 小時後始可測試]	
	Thermal Cycle [冷熱循環]	-40°C ~80°C [60 min/cycle] *50 cycles allow panel stays in normal environment for 12 hrs [-40°C ~80°C，每循環 60 分鐘，共 50 次循環，回常溫 12 小時後始可測試]	

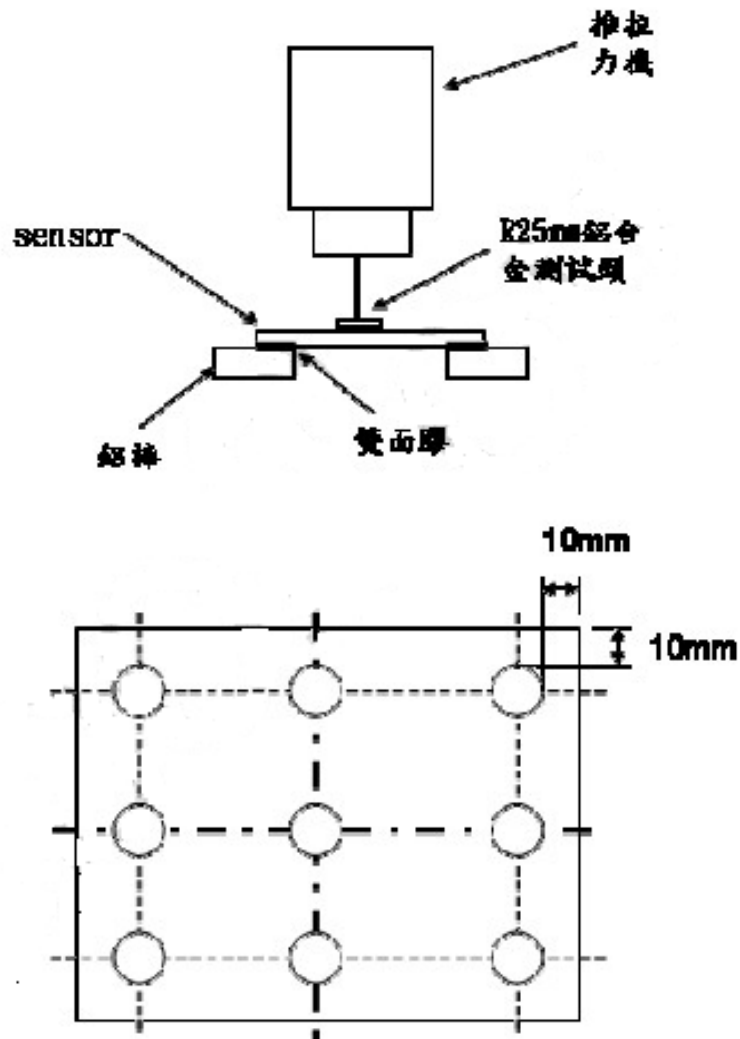
10. Electro Static Discharge Test[靜電測試]

Item [項目]	Specification [規格]	
ESD Test [靜電測試]	Unit is non-operating and ground [未接地與未作動中測試] Discharge interval : 1 second [放電間隔 : 1 sec] Polarity of the output voltage : Positive and negative [放出電壓極性 : 正電極與負電極]	Contact Discharge : ±8KV [接觸放電 : ±8KV]
	Number of discharge : Discharge +/- for 10 times for each test point (Total of 5 points) [放電 : 放電+ / - 每個測試點 10 次 (共 5 點)]	Air Discharge : ±15KV [空氣放電 : ±15KV]



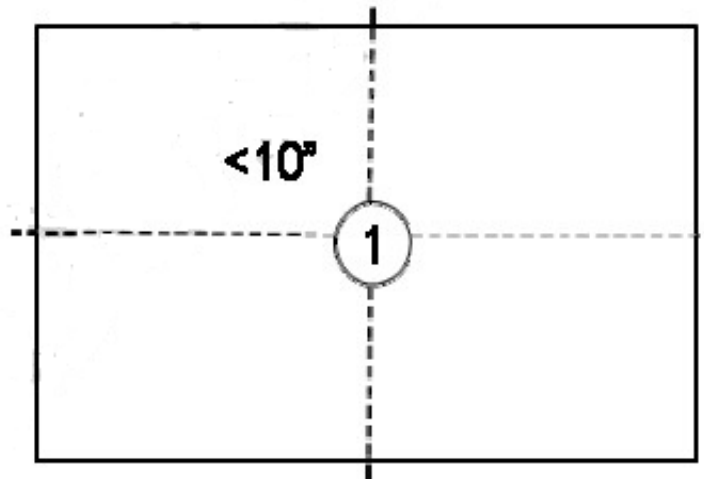
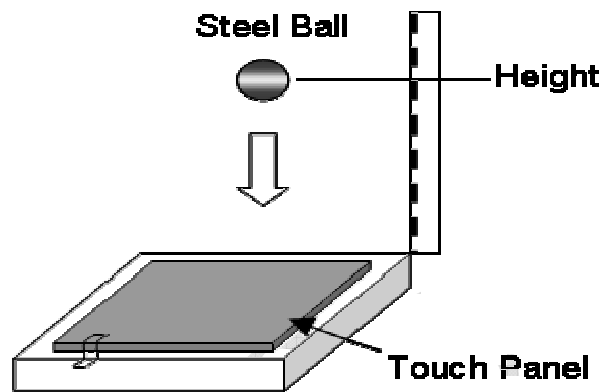
11. Impact Test[衝擊測試]

Item [項目]	Specification [規格]	Condition [條件]
Impact Test [衝擊測試]	Aluminum alloy Head R25mm ,9 Point , Speed 10 mm/min , Load 30 Kgf [鋁合金測試頭 R25mm, 9 點, 速度 10 mm/min, 重力 30 Kgf]	NO any crack on TP after test [TP 於測試後不得破裂]



12. Ball Drop Test[落球測試]

Item [項目]	Specification [規格]	Condition [條件]
Ball Drop Test [落球測試]	Steel ball Φ 32 mm, 130 g , 1 Drop Points , Height 40cm [鋼球 Φ 32 mm, 130 g, 1 個落點, 高度 40cm]	NO any crack on TP after test [TP 於測試後不得破裂]



13. Attention [注意事項]

Item [項目]	EXPLANATION [說明]
13-1 Storage [儲存]	<ol style="list-style-type: none"> <li data-bbox="419 320 1407 459">1. A touch panel should be stored under the environment temperature and humidity controlled as suggested. [觸控面板必須被儲存放置在一如規格書所建議的從事環境溫度與濕度控制的區域內] <li data-bbox="419 465 1407 504">2. Do not store a touch panel in direct sunlight. [不可將觸控面板直接曝曬在陽光下]
13-2 Cleaning [清潔]	<ol style="list-style-type: none"> <li data-bbox="419 521 1407 604">1. Prevent using any kind of the chemical solvent, acidic or alkali solution when cleaning. [若要清潔觸控面板，請盡量避免使用諸如強酸或強鹼之類的任何化學溶劑] <li data-bbox="419 611 1407 694">2. Neutral detergent or isopropyl alcohol was suggested if the panel is cleaned. [若要清潔觸控面板，我們建議使用中性的清潔劑或異丙醇和酒精等等]
13-3 Assembly [組裝]	<ol style="list-style-type: none"> <li data-bbox="419 712 1407 840">1. Do not apply rough force such as bending or twisting to the touch panel during assembly. [觸控面板在組裝時，請不要過度施力導致玻璃表面發生諸如變形或扭曲等形變現象的發生] <li data-bbox="419 846 1407 929">2. Excessive force or strain to the panel or FPC/COF is prohibited. [對於 FPC 或 COF 的作業時，過度的拉力或繃緊作業是必須被禁止與避免的] <li data-bbox="419 936 1407 1131">3. Past VHB tape or sponge with adhesive on the gap between a touch panel and a LCD module to segregate water and dust contamination. [請在觸控面板與 TFT-LCD 面板的中間間隙處選用適合的雙面膠帶或是具有黏性的泡棉加以阻絕外在水份與汙染源的干擾] <li data-bbox="419 1137 1407 1243">4. Suggest that the touch panel and screen spacing 0.5mm. [建議觸控面板與螢幕之間留有0.5m的距離]
13-4 Operation [操作]	<ol style="list-style-type: none"> <li data-bbox="419 1261 1407 1433">1. The panel must be operated in a steady environment, the abrupt change of the environment conditions may cause the malfunction of the panel. 觸控面板必須在穩定的環境狀況下被使用，環境狀態的突然急遽變化有可能會導致觸控面板的機能 [性失效的發生] <li data-bbox="419 1440 1407 1680">2. In order to guarantee all functions of a touch panel stable, please make sure that system is grounded or a power adapter is connected correctly to ground loop (Connection to earth ground is suggested). [為確保觸控面板的功能得以穩定有效的發揮呈現，請務必確認系統的接地迴路與電源供應器的接地迴路被正確的銜接與執行(與大地作共地的接地迴路是最佳的設計)] <li data-bbox="419 1686 1407 1769">3. Do not pull the interface connector in or out while the touch panel is operating. [觸控面板在操作的過程中，請勿任意插拔觸控面板與系統端的界面連接器] <li data-bbox="419 1776 1407 1917">4. Any sharp edged or hard objects are interdiction to hitting when touch panel operation. [觸控面板在操作的過程中，請務必禁止與避免使用任何尖銳或硬質物體去敲擊碰觸]

14. Appearance Inspection[外觀檢查]

14-1 The inspection shall be performed by using one 600~1000 Lux fluorescent lamp as back or side light. The panel shall be placed at 30cm away from eyes as shown below. Detail settings are shown in Figures 12.1.

[12-1 檢測始用之燈光為一盞 600~1000 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 (Figure 12.1)]

14-2 Minor impurities outside viewing area(VA) are acceptable unless their existence affect electrical functions.

[12-2 只要不影響電器功能性，可視區(VA)外之外觀瑕疵是可以被允許的]

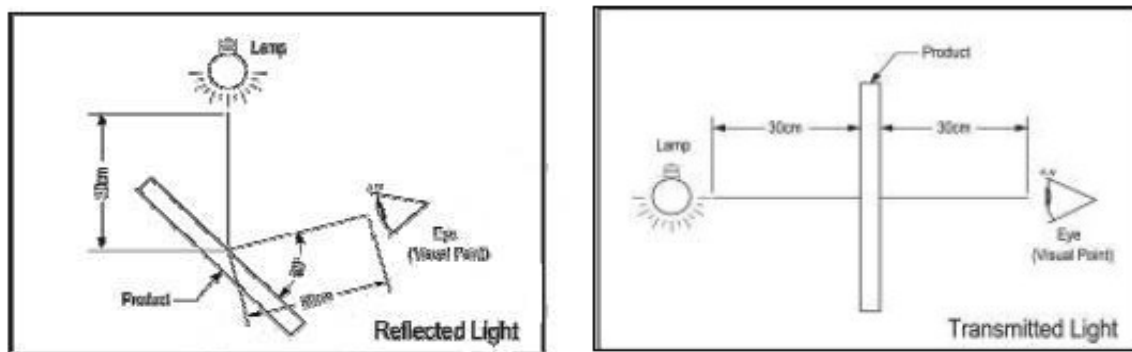
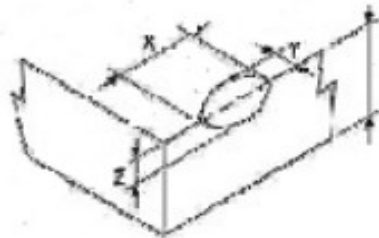


Figure 12.1

14-3 Glass Flaw [玻璃瑕疵]

$$X < 3, Y < 2, Z \leq 0.5T$$



Note: T=Glass thickness [玻璃厚度]

14-4 Please refer to Appendix I: Appearance Specification.

[11-4 外觀規格請詳見(附註 1)]

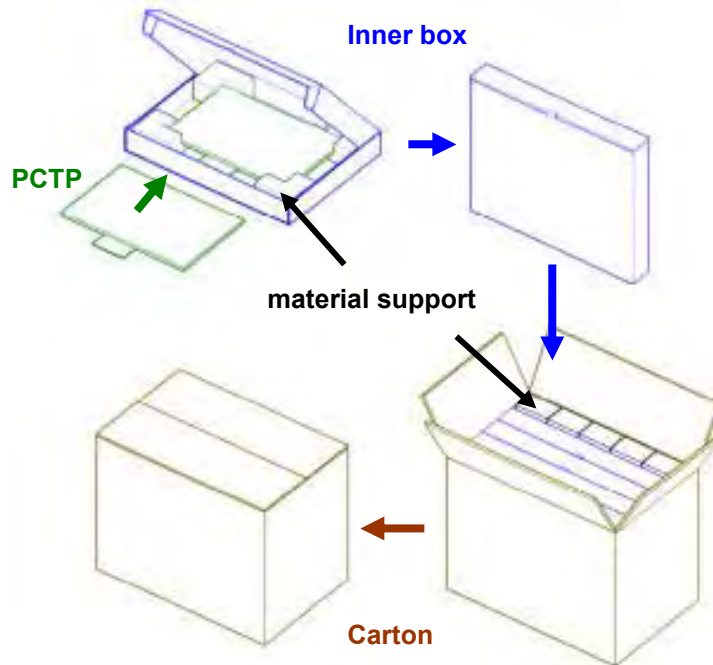
[Appendix I]

Appearance Specification [外觀規格]

Item [項目]	Specification [規格]
Spot/Dots [污點/顆粒異物]	(1) $0.7 < D \leq 0.9 \text{mm}$, Max:2 points (2) $0.5 < D \leq 0.7 \text{mm}$, Max:4 points (3) $D \leq 0.5 \text{mm}$, Ignored (4) $D > 0.9 \text{mm}$, NG
Scratch [刮傷]	(1) $0.15 < W \leq 0.2 \text{mm}$, $L \leq 8 \text{mm}$, Max:2 points (2) $0.1 < W \leq 0.15 \text{mm}$, $L \leq 8 \text{mm}$, Max:4 points (3) $W \leq 0.1 \text{mm}$, Ignored (4) $W > 0.2 \text{mm}$, NG
Bubble [氣泡]	(1) $0.7 < D \leq 0.9 \text{mm}$, Max:2 points (2) $0.5 < D \leq 0.7 \text{mm}$, Max:4 points (3) $D \leq 0.5 \text{mm}$, Ignored (4) $D > 0.9 \text{mm}$, NG
<p>< Remark > [備註欄]</p> <p>D=Diameter=直徑 W=Width=寬度 N=個數 L=Length=長度 Unit: mm</p> <p>Note 1: Particle, Stain or Linear Object that can be clean out easily within 3 times is disregard. 註(一):異物、髒污、條狀物正常擦拭 3 次可去除,即可允收。</p> <p>Note 2: The defect on back side is ignored except of Nameplate 註(二): 背面可視區以外可忽略。</p>	

15. Packaging information [包裝資訊]

15-1 Package [包裝方式]



15-2 Quantity and Size [數量與尺寸]

PCTP	Inner box		Carton		
Size	TP QTY (pcs)	Inner box size (cm)	Inner box QTY (box)	Carton size (cm)	Total (pcs)
15.6	5	45*36*7	5	46*41*42	25

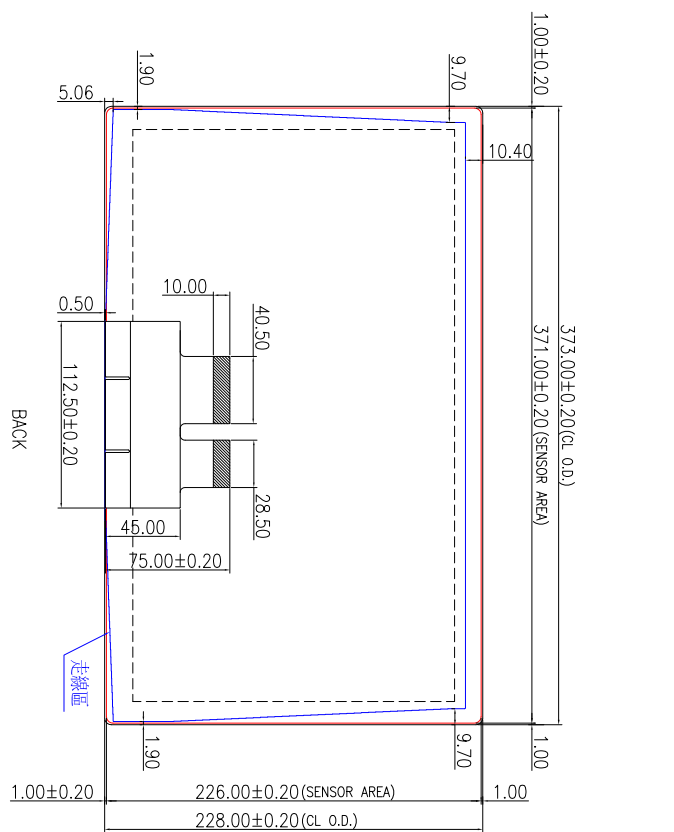
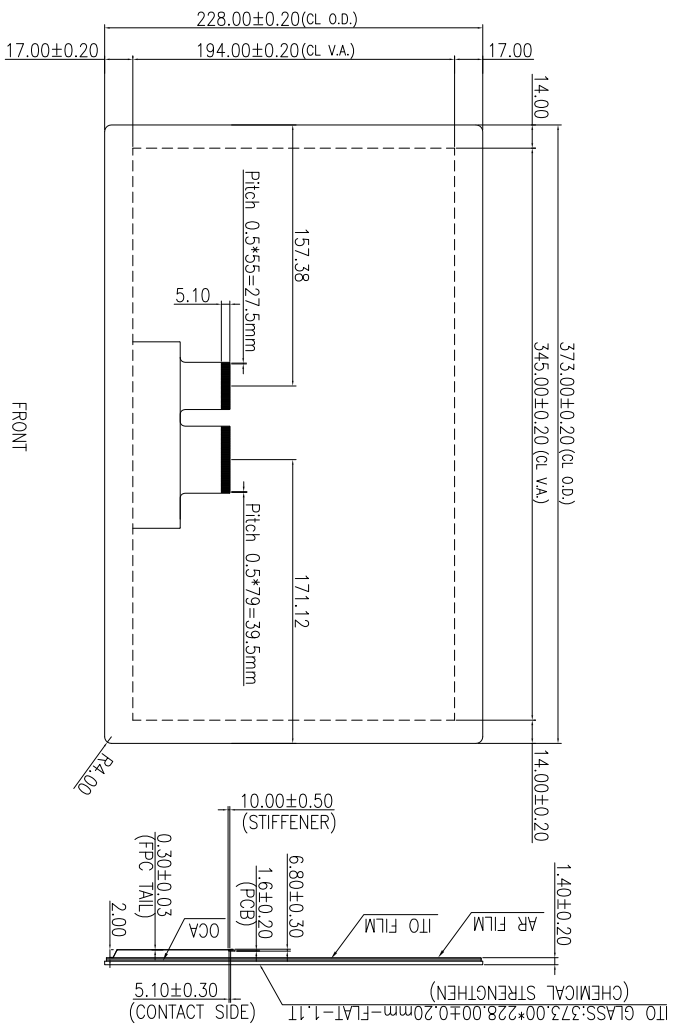
2.1.3 Shipping Number [出貨編號]

Paste Site [黏貼處] FPC

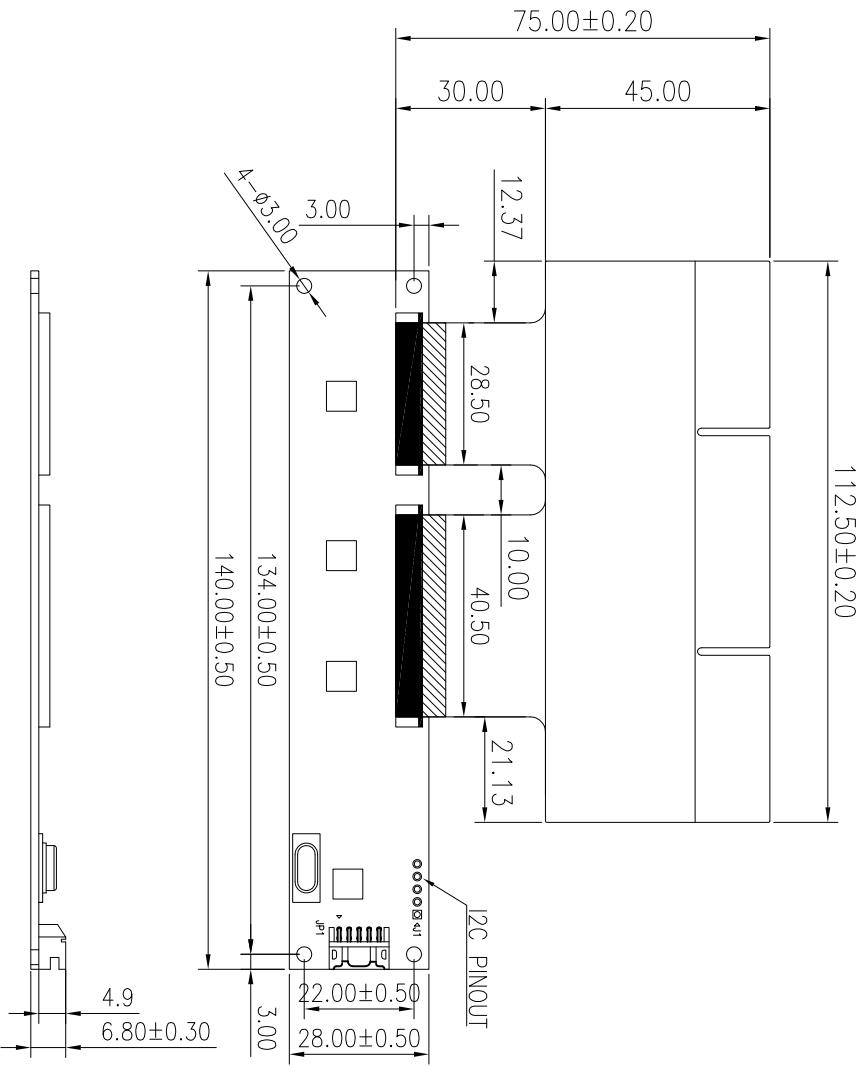
Explain [定義] : 12-1-123456



Rev.	Date	Description
A	2012.02.23	First Release



TPM		MODEL	TPM-15.6
APPROVED	<i>Chi Shuang</i>	DATE	2012.02.23
CHECK	<i>Eric</i>	DATE	2012.02.23
DESIGN	<i>Shawin</i>	DATE	2012.02.23
SCALE 1/1	UNIT: mm	REV.	A
		PART NO.	DESCRIPTION

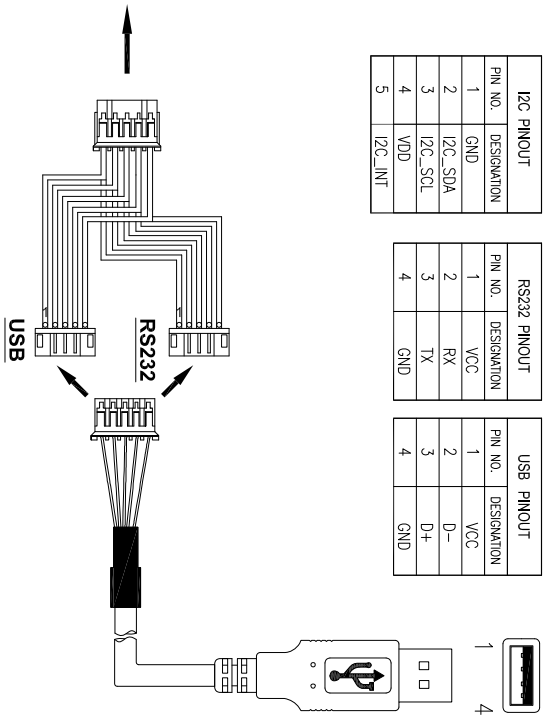


Rev.	Date	Description
A	12.04.24	First Release

I2C PINOUT	
PIN NO.	DESIGNATION
1	GND
2	I2C_SDA
3	I2C_SCL
4	VDD
5	I2C_INT

RS232 PINOUT	
PIN NO.	DESIGNATION
1	VCC
2	RX
3	TX
4	GND

USB PINOUT	
PIN NO.	DESIGNATION
1	VCC
2	D-
3	D+
4	GND



USB PINOUT
RS232 PINOUT

CYPRESS		MODEL	CY-15R6
APPROVED	<i>Ng Yaning</i>	DATE	2012.04.24
CHECK	<i>Shanice</i>	DATE	2012.04.24
DESIGN	<i>Shanice</i>	DATE	2012.04.24
SCALE	1/1	UNIT:	mm
		REV.	A
		PART NO.	
		DESCRIPTION	
		COB	TMA393

2.6 Pin Assignment

2.6.1 FPC Connector

2.6.1.1 CN1

CN1 Connector



Pin	Name	Pin	Name	Pin	Name	Pin	Name
20	Y14	40	Y34				
19	Y13	39	Y33				
18	Y12	38	Y32				
17	Y11	37	Y31				
16	Y10	36	Y30	35	Shield_Y2		
15	Y9	35	Y29	34	Y49		
14	Y8	34	Y28	33	Y48		
13	Y7	33	Y27	32	Y47		
12	Y6	32	Y26	31	Y46		
11	Y5	31	Y25	30	Y45		
10	Y4	30	Y24	29	Y44		
9	Y3	29	Y23	28	Y43		
8	Y2	28	Y22	27	Y42		
7	Y1	27	Y21	26	Y41		
6	Extra_Y2	26	Y19	25	Y39		
5	Extra_Y1	25	Y18	24	Y38		
4	Shield_Y1	24	Y17	23	Y37		
3	NC	23	Y16	22	Y36		
2	NC	22	Y15	21	Y35		

CN2 Connector



Pin	Name	Pin	Name	Pin	Name	Pin	Name	Pin	Name
10	Shield_X1	19	X19	14	X39	15	X59		
9	X0	20	X20	13	X40	16	X60		
8	X1	21	X21	12	X41	17	X81		
7	X2	22	X22	11	X42	18	X82		
6	X3	23	X23	10	X43	19	X83		
5	X4	24	X24	9	X44	20	X84		
4	X5	25	X25	8	X45	21	X85		
3	X6	26	X26	7	X46	22	X86		
2	X7	27	X27	6	X47	23	X87		
1	X8	28	X28	5	X48	24	X88		
	X9	29	X29	4	X49	25	X89		
	X10	30	X30	3	X50	26	X90		
	X11	31	X31	2	X51	27	X91		
	X12	32	X32	1	X52	28	X92		
	X13	33	X33		X53	29	X93		
	X14	34	X34		X54	30	X94		
	X15	35	X35		X55	31	X95		
	X16	36	X36		X56	32	X96		
	X17	37	X37		X57	33	X97		
	X18	38	X38		X58	34	X98		
					X59	35	X99		
					X60	36	X100		
						37	Shield_X2		



