

坤巨資訊股份有限公司
GROOVY TECHNOLOGY CORP.

SPECIFICATIONS OF TOUCH PANEL

觸控面板標準規範書

Date(日期):

Customer(客戶):

Model(型式):

Mode(種類): 4 Wire Resistive Touch Panel

Customer Approval(客戶確認)

--

Approve(確認)	Checked(審閱)	Preparation(製表)

GROOVY TECHNOLOGY CORP.
2F,NO.2,LANE 252,SEC.3,CHUNG GHING
N.ROAD,TAIPEI,TAIWAN
TEL : +886-2-25952775 FAX : +886-2-25949489
EMAIL : groovy@seed.net.tw
http : //www.gtouch.com.tw

坤巨資訊股份有限公司
台北市重慶北路三段 252 巷 2 號 2 樓
電話 : 02-25952775 傳真 : 02-25949489
EMAIL : groovy@seed.net.tw
網址 : http : //www.gtouch.com.tw

01.Characteristics.....	02
02.Features	02
03.General Specification.....	02
04.Environmental Characteristics.....	02
05.Optical Characteristics.....	02
06.Electrical Characteristics.....	02
07.Mechanical Characteristics.....	03
08.Reliability.....	03
09.Durability.....	03
10.Inspection Methods.....	04
11.Appearance Inspection.....	05
12.Attention of Mounting Condition.....	06
13.Guaranty.....	07
14.Caution.....	07
15.Appearance Specification.....	08

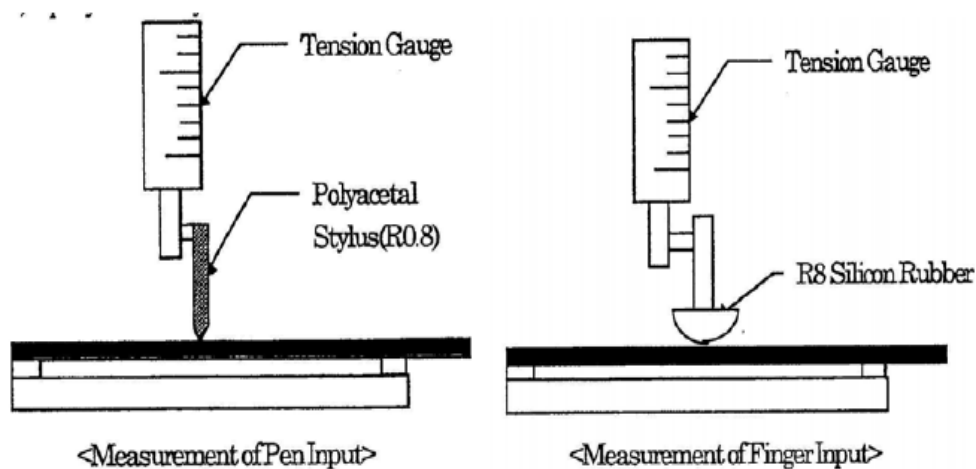
01.Characteristics		
The specification is for Four-Wire analog resistive touch panel.		
02.Features		
Item	Specifications	
(1).Type	Four-Wire Analog Resistive Touch Panel	
(2).Input Mode	Stylus Pen or Finger	
(3).Connector	FPC	
03.General Specification		
(1).Frame Size		
(2).View Area		
(3).Active Area		
(4).Total Thickness		
(5).Tail Length		
04.Environmental Characteristics		
Item	Temperature	Humidity (Non Condensing)
(1).Operation	-0°C ~ +50°C	20%RH ~ 90%RH
(2).Storage	-20°C ~ +70°C	10%RH ~ 90%RH
NOTE :		
The environment is under normal atmosphere pressure.		
While the environment temperature is above 65°C, the humidity will be allowed in below 50%RH .		
05.Optical Characteristics		
Item	Specifications	
(1).Transparency	$\geq 76\%$ (measured by BYK-Gardner)	
06.Electrical Characteristics		
Item	Specifications	
(1).Loop Resistance	X:200~900Ω, Y:200~900Ω	
(2).Linearity	$X \leq 1.5\%$, $Y \leq 1.5\%$	
(3).Chattering	$\leq 10\text{ms}$	
(4).Insulation	$\geq 20\text{M}\Omega/25\text{V}(\text{DC})$	
(5).Endurance	DC25V for 5/sec	
07.Mechanical Characteristics		
Item	Specification	Condition
(1).Operating Force	Stylus=R0.8	$\leq 8\sim 50\text{g}$
(4).Hardness	3H pencil, pressure 1N/45°	$\geq 3\text{H}$

08. Reliability		
Item	Specification	Condition
(1).Constant Temperature /Humidity	60°C /90%RH, 240 hrs and normalized for 24 hrs	After the reliability test, the film may have the condition of bubble; nevertheless the electric characteristic still satisfies the following standard. Satisfy (1), (2) of 05; (1), (4) of 06; (2) of 06 satisfies $X \leq 2.0\%$, $Y \leq 2.0\%$
(2).Heat Cycle	70°C /240 hrs and normalized for 24 hrs	
(3).Cold Cycle	-20°C /240 hrs and normalized for 24 hrs	
(4).Thermal Cycle	-20°C /30mins and 70°C /30mins Total 60cycles and normalized for 24 hrs	

09. Durability		
(1).Knock Test	100,000 words(R0.8mm with 250g force) 1,000,000 times(R8,hardness 60°,250g force)	Satisfy (1), (2) of Item 5; (1), (4) of Item 6; (2) of item 6 satisfies $X \leq 2.0\%$, $Y \leq 2.0\%$

Measurement of operating

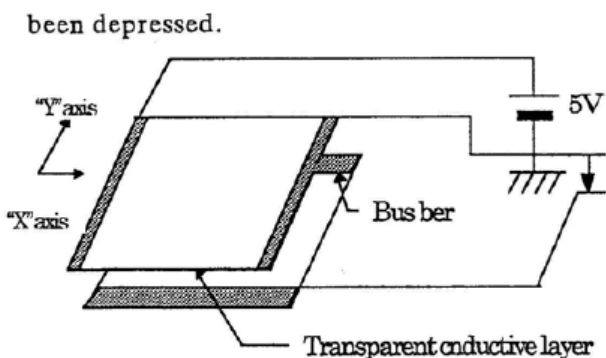
When DC5V is impressed to the "X" side, force is loaded by a head of R8 with hardness of Hs 60 and a voltage value is stable, such force shall be the operation force. Upon pen operation, a polyacetal stylus of R0.8 shall be used.



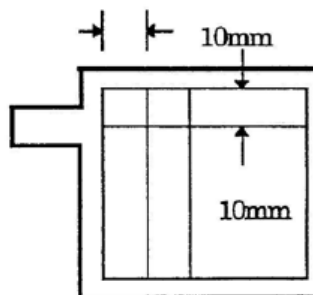
10. Inspection Methods

(1). Linearity Condition

In fig.1, when the DC5V is impressed between the “X” directional electrode and “Y” directional electrode of table alternately, the voltage between the depressed point and the reference surface shall be the output voltage (Eox and Eoy). As shown in fig.2, measure the point on 10mm grid enclosed by the positions “ A “ and “ B ”, which are located at the inside of visible area the specified distance away from the edge, has been depressed.

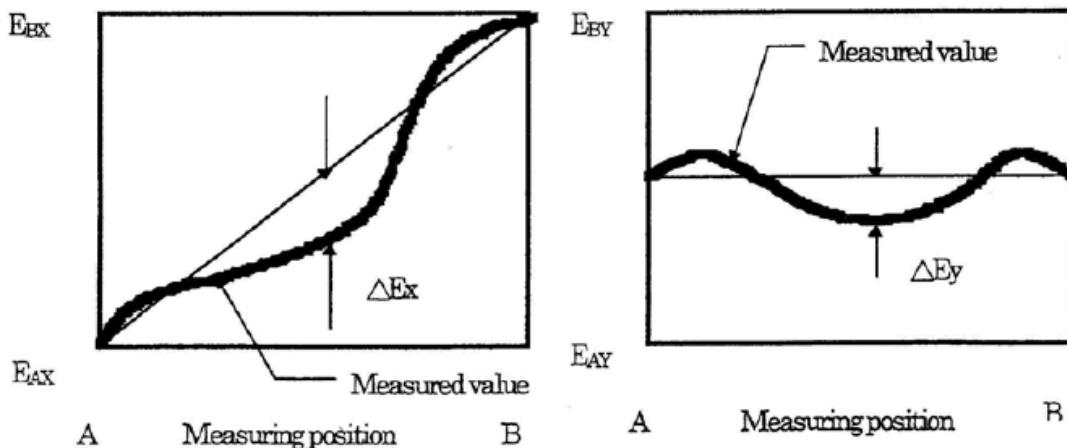


<Fig.1>



<Fig.2>

When the output voltage corresponding to every measurement position is plotted as shown in fig.3, the difference between the voltage enclosed by the positions “ A “ And “ B “ and the output voltage at the same position shall be “ ΔE_x (or “ ΔE_y ”) and the electric potential difference “ E_{ABx} ” (or “ E_{ABy} ”) between “ A ” and “ B ” shall be defined as the linearity. Linearity of transparent table (X)= $(\Delta E_x/E_{ABx})$ *100% Linearity of transparent table (Y)= $(\Delta E_y/E_{ABy})$ *100%



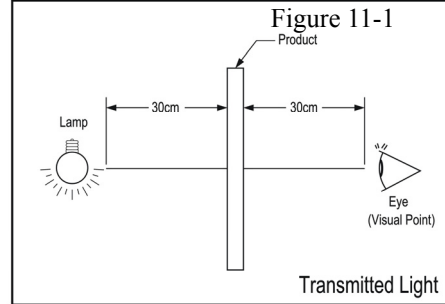
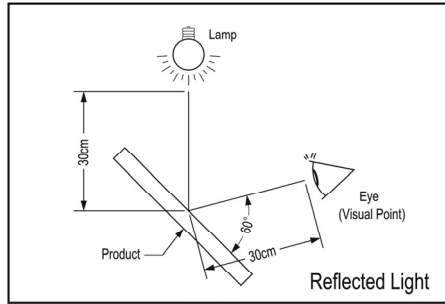
(2). Specification

The linearity must be meet the electrical specification outlined in item 6

11.Appearance Inspection

(1)The flaws and impurities are allowed outside viewing area except for those affecting electrical functions.

(2)The inspection was performed with one 17W fluorescent lamp lighting from back or side. The panel was placed 30cm away from eyes. (Figure 11-1)



(3) Glass Flaw

Item	Picture	Specification
Corner Flaw		$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
Edge Flaw		$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
Progressive Flaw		Not allowed

Note: T=Glass thickness

12.Attention of Mounting Condition

- (1) 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 to panel surface. To avoid pressing error on touch panel accidentally, please remain space between the surface of panel and the Bezel.
- (2) Bezel opening must be designed between Viewable area and Active area. Bezel opening must not touch Viewable area.
- (3) We recommend elastic material made support.
- (4) Do not use adhesive to bond top surface (ITO Film) of touch panel with enclosure.
- (4) The edge of touch panel is conductive. Don't touch it with metal after mounting.

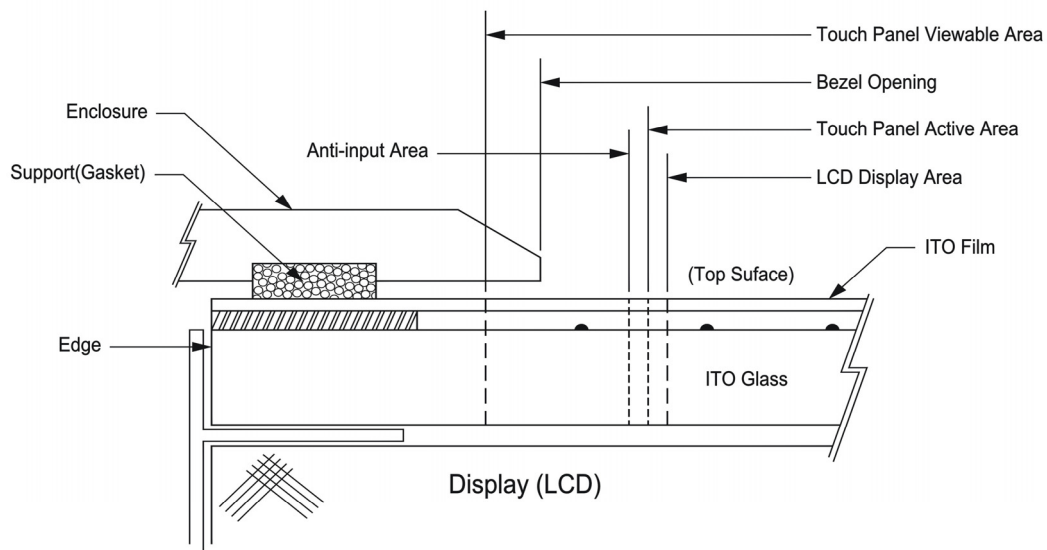
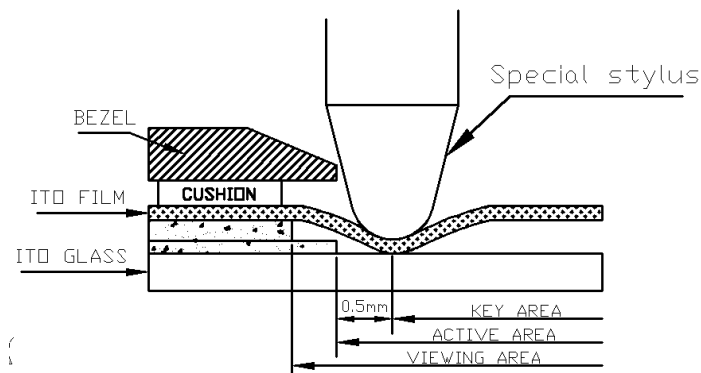


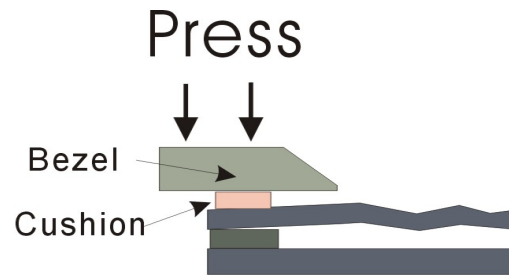
Figure 12-1

Mounting Notes

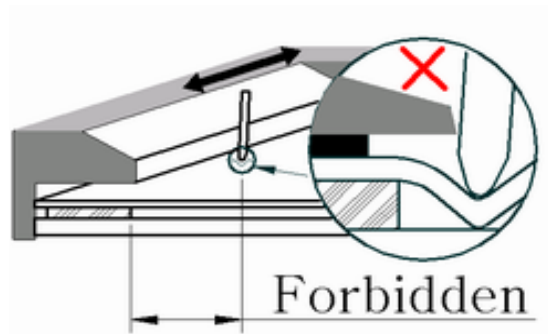
12.1 Bezel edge must be posited between Key Area and Viewing Area, if the edge enters the Key area may cause unexpected input if the gap to narrow.



12.2 If a cushion is used between bezel and film must be choose as free as enough to absorb the expansion and contraction to avoid the distortion of film.

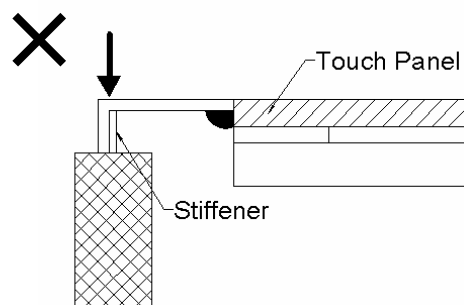


12.3 The area from Viewing Area 2.5mm is structurally weak for pressure, especially for pen use, the film may be forcibly bent and cause deflection. This area must be protected by the bezel and input must be avoided.



12.4 Most of the touchscreens have air vent to equalize the inside air pressure to the outside one. The air vent must be open and liquid contact must be avoided as the liquid may be absorbed if the liquid is accumulated near the air vent.

12.5 Don't insert cable line like follow drawing could cause the tail broken.



12.6 Don't bend the cable line on the edge of the glass, it could cause the tail broken.



13. Guaranty

GROOVY comes with a 1-year guaranty on 4 wire resistive touch panel. GROOVY guaranty provide for repair and replacement without any charge during this period.

GROOVY reserves the right in its sole discretion to determine the defects received, and will take the responsibility if there is any defect or damages.

Notice: GROOVY is not responsible for following situation:

1. Damages caused by improper handling from clients, such as the shipping period or manufacturing processes.
2. Damages caused by either natural disaster or human factors after receiving the products.
3. Damage caused by self-repairs, and modifications or disassembling of GROOVY products from clients without prior notice.

14. Caution

Storage	(1) Storage shall be under the temperature and humidity that mentioned in the (2) specification. Do not expose the products to direct sunlight or piling caused damage on the surface.
Unpacking	(1) Check for the correct vertical direction of the package before unpacking.
Handing	(1) In order to prevent fingerprints or stain on the products, and get a cut by sharp (2) edges of glass, clean finger sacks or glove and mask are required during handing. (3) Do not touch the viewing area of the panel. (4) Do not handle the tail (connector) of panel directly, when you handle the touch panel. It will cause the problem of combination and reliability

Cleaning	<p>(1) Clean and soft clothes with neutral detergent and with isopropyl alcohol may be used for cleaning.</p> <p>(2) Do not use any chemical solvent, acidic or alkali solution.</p> <p>(3) The panel is designed with air groove. Insulation and cushioning pads should be designed around the edges of the panel to prevent water and dust.</p>
Operating	<p>(1) Use a plastic stylus (tip R0.8 or over) or finger. Sharp edged or hard articles are prohibited.</p> <p>(2) The gathering of dew in the panel may occur with abrupt temperature or humidity changes. A stable environment condition is recommended.</p>
Others	<p>(1) Keep the surface clean. No adhesives should be applied.</p> <p>(2) Avoid high voltage and static charge.</p> <p>(3) GROOVY has the right to change the materials and specification.</p>
15.Appearance Specification	
Particle	<p>(1) $D \leq 0.25 \rightarrow \text{OK}$</p> <p>(2) $0.25 < D \leq 0.4$ (each area contains ≤ 3, total ≤ 5) $\rightarrow \text{OK}$</p> <p>(3) $D > 0.4 \rightarrow \text{NG}$</p>
Linear Object	<p>(1) $W \leq 0.05 \rightarrow \text{OK}$</p> <p>(2) $0.05 < W \leq 0.1$ and $L \leq 5.0$, total $\leq 3 \rightarrow \text{OK}$</p> <p>(3) $W > 0.1 \rightarrow \text{NG}$</p> <p>Remark: the particle will be ignored when it is cleanable.</p>
Scratch	<p>(1) $W \leq 0.025 \rightarrow \text{OK}$</p> <p>(2) $0.025 < W \leq 0.05$ and $L \leq 12.0$, total $\leq 5 \rightarrow \text{OK}$</p> <p>(3) $0.05 < W \leq 0.1$ and $L \leq 6$, total $\leq 5 \rightarrow \text{OK}$</p> <p>(4) $W > 0.1 \rightarrow \text{NG}$</p>
< Remark >	
1. D=Diameter	
2. W=Width	
3. L=Length	
4. Each area contains=20 ϕ	
5. UNIT=mm	