

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

Data Date(資料日期): 080925

Version(版本): 1.0

Customer(客戶):

Model(型式): GP-190F-SK-GA03Z

Type(種類): Saw touch panel

Customer Approval(客戶確認)

Signature Date _____

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

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01.Characteristics

The specification is for Surface Acoustic Wave(SAW) touch panel.

1.High Transparency:

Combined with special optical glass, the transmittance can be raised to 95%~99%.

2.High Hardness Glass:

The hardness is up to 7H. The operation life has been extended to be 50,000,000 times. Enforced glass can prevent damage of any impact. Appropriate for installation in public places.

3. High Reaction Sensitivity:

adopt surface acoustic wave, it is more sensitive than the finger touches and accurate of sensor

02.Features

| Item | Specifications |
|----------------|----------------------------|
| (1).Type | Surface Acoustic Wave(SAW) |
| (2).Input Mode | Finger or Soft Material |
| (3).Connector | FFC |

03.General Specification

| | |
|---------------------|---------------|
| (1).Frame Size | 396.00*324.00 |
| (2).View Area | 380.00*306.00 |
| (3).Active Area | 377.00*302.00 |
| (4).Total Thickness | 3.00 |
| (5).Tail Length | 600.00±20 |

04.Environmental Characteristics

| Item | Temperature | Humidity (Non Condensing) |
|---------------|---------------|---------------------------|
| (1).Operation | -10°C ~ +50°C | 10%RH ~90%RH |
| (2).Storage | -20°C ~ +70°C | 10%RH ~ 90%RH |

Note: All terms under 1 atmosphere.

05.Optical Characteristics

| Item | Specifications |
|--------------|-------------------------------------|
| Transparency | ≥90% ± 3% (Measured by BYK-Gardner) |
| Haze | Glare Glass |

06.Electrical Characteristics

| Item | Specifications |
|---------------------|----------------|
| Positional Accuracy | ≤2mm |

| | |
|------------|------------------|
| Resolution | 4096*4096 |
| Force | 85~100g |
| Hardness | 7H |
| Knock Test | 35,000,000 times |

07.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)

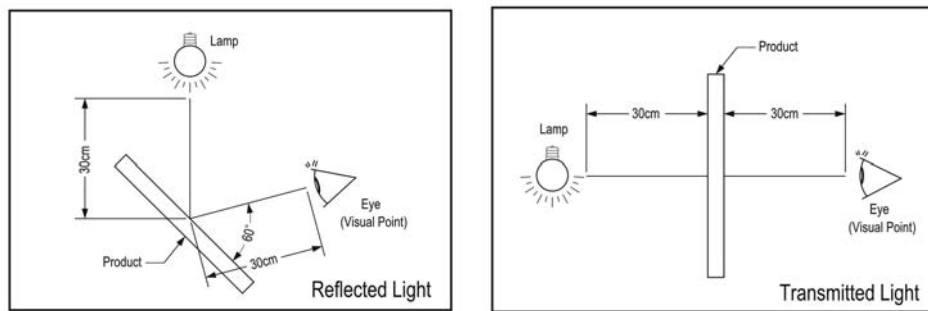


Figure 11-1

(3) Glass Flaw

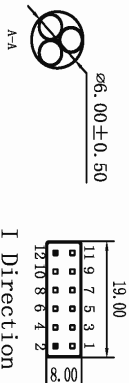
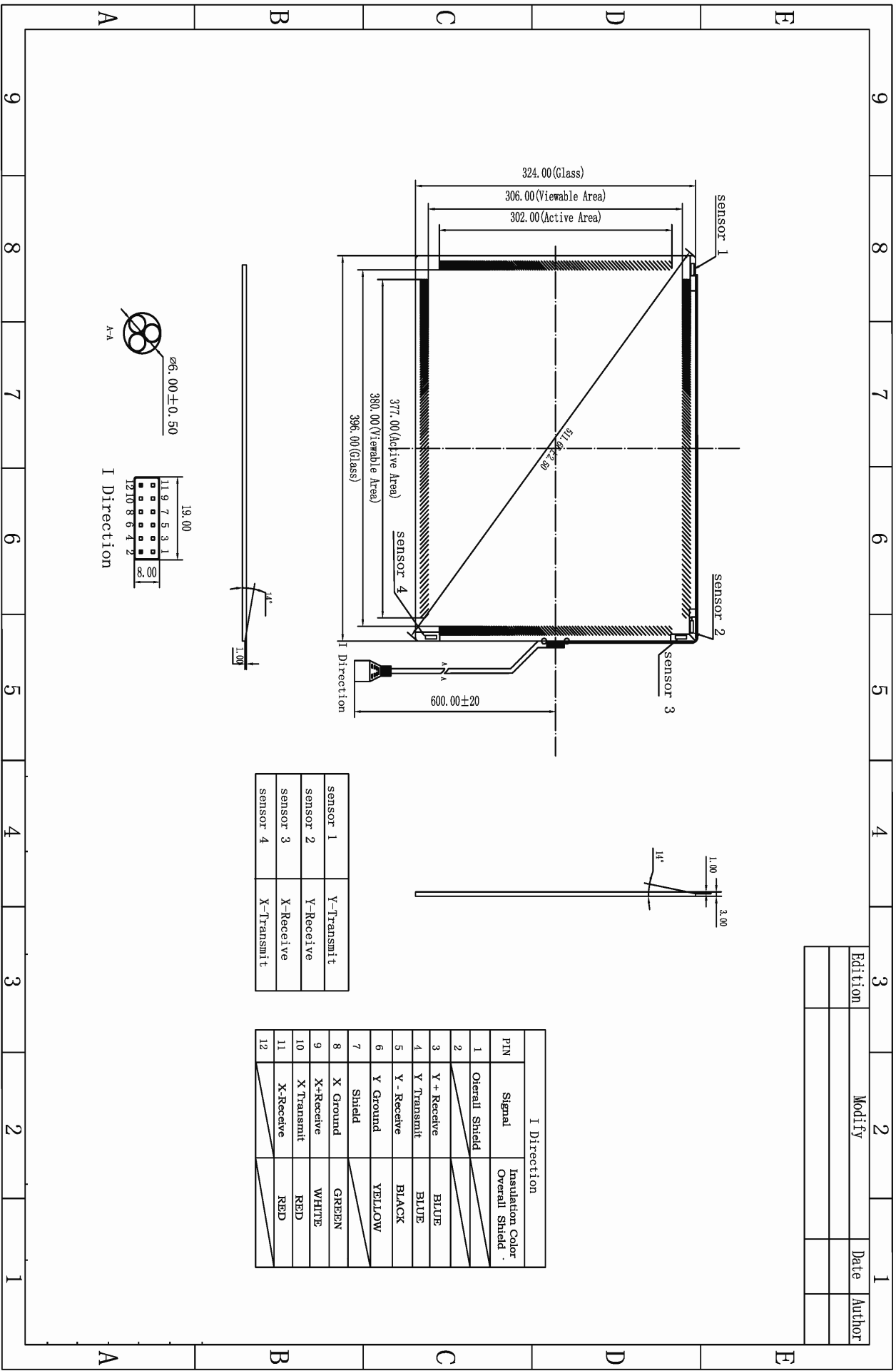
| Item | Picture | Specification |
|------------------|---------|--|
| Corner Flaw | | $X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$ |
| Edge Flaw | | $X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$ |
| Progressive Flaw | | Not allowed |

Note: T=Glass thickness

| 08. Warranty | |
|--|---|
| <p>GROOVY comes with a 3-year guaranty on Surface Acoustic Wave(SAW) 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:</p> | |
| 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. | |
| 09. Caution | |
| Storage | (1) Storage shall be under the temperature and humidity that mentioned in the 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 edges of glass, clean finger sacks or glove and mask are required during handing. (2) Do not touch the viewing area of the panel. (3) 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 | (1) Clean and soft clothes with neutral detergent and with isopropyl alcohol may be used for cleaning. (2) Do not use any chemical solvent, acidic or alkali solution. (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. |
| Install and Assembling | (1) Excessive force or strain to the panel or tail is prohibited. (2) Gasket or cushion pads around the edge of the panel may segregate water and/or dust contamination. (3) Please do not use can create the wrong material quality. |
| Operating | (1) Use a finger. Sharp edged or hard articles are prohibited. (2) The gathering of dew in the panel may occur with abrupt temperature or humidity changes. A stable environment condition is recommended. |
| Others | (1) Keep the surface clean. No adhesives should be applied. (2) Avoid high voltage and static charge. (3) GROOVY has the right to change the materials and specification. |

| 10.Appearance Specification | |
|--|--|
| Particle | (1) $D \leq 0.1 \rightarrow \text{OK}$ (2) $0.1 < D \leq 0.3$ (each area contains ≤ 3 , total ≤ 5) $\rightarrow \text{OK}$ (3) $D > 0.3 \rightarrow \text{NG}$ |
| Linear Object | (1) $L \leq 5 \rightarrow \text{OK}$ (2) $5 < L \leq 30$ and $W \leq 0.1$, total $\leq 5 \rightarrow \text{OK}$ (3) $L > 30 \rightarrow \text{NG}$ Remark: the particle will be ignored when it is cleanable. |
| Scratch | (1) $W \leq 0.025 \rightarrow \text{OK}$ (2) $0.025 < W \leq 0.05$ and $L \leq 12.0$, total $\leq 5 \rightarrow \text{OK}$ (3) $0.05 < W \leq 0.1$ and $L \leq 6$, total $\leq 5 \rightarrow \text{OK}$ (4) $W > 0.1 \rightarrow \text{NG}$ |
| Convexity | (1) $D \leq 0.1$ and total $\leq 2 \rightarrow \text{OK}$ (2) $D > 0.2 \rightarrow \text{NG}$ |
| <p>< Remark ></p> <ol style="list-style-type: none"> 1. D=Diameter 2. W=Width 3. L=Length 4. Each area contains=20 ϕ 5. Unit=mm | |

| | | |
|----------|--------|--------|
| 3 | 2 | 1 |
| Revision | Modify | Date |
| | | Author |



| | |
|----------|------------|
| sensor 1 | Y-Transmit |
| sensor 2 | Y-Receive |
| sensor 3 | X-Receive |
| sensor 4 | X-Transmit |

| I Direction | | Insulation Color |
|-------------|----------------|------------------|
| PIN | Signal | Overall Shield |
| 1 | Overall Shield | |
| 2 | | |
| 3 | Y + Receive | BLUE |
| 4 | Y Transmit | BLUE |
| 5 | Y - Receive | BLACK |
| 6 | Y Ground | YELLOW |
| 7 | Shield | |
| 8 | X Ground | GREEN |
| 9 | X+Receive | WHITE |
| 10 | X Transmit | RED |
| 11 | X-Receive | RED |
| 12 | | |

| | | | | | |
|---------|------------------|------|----------|----------|------------|
| MODEL | GP-190F-SK-GA03Z | TYPE | SAWTOUCH | DATE | 2007.03.06 |
| UNIT | mm. | NO | | CUSTOMER | |
| DRAWING | General | NOTE | SAW | APPROVED | |

