

DY1562W-4262

ACDC® LG-Siliconworks SW4101D Projected Capacitive
Multi-Touch Touch Panel

Approval Sheet

Ver. 1.0

刘君

Revision History

| Date | Version | Description |
|------------|---------|---------------|
| 2020.01.10 | V1.0 | First version |
| | | |
| | | |

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Introduction

Shipping Damage

- On receipt of ACDC Projective Capacitive Multi Touch Panel Product, if you notice damage to the shipping carton, or concealed damage, be sure to save all packing materials for later inspection by the carrier, who is responsible for any shipping damage.

Warranty

- If failure occurs during the warranty period of the product, please contact your retailer from which the product was purchased.

Safety Information

- To avoid damage, keep sharp objects away from the touch panel and FPC.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.



The symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

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This chapter describes the item
for warranty

1 Warranty

1 Warranty

The warranty specified applies to ACDC'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:

- 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 ACDC; ACDC 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.

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This chapter describes the
application for touch panel

2

Application

2 Application

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

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This chapter describes the specification and touch IC for touch panel

3

Structure and Specification

3 Structure and Specification

3.1 Structure

| Structure | Materials | Description | Remark |
|--------------|------------|-------------|------------------|
| First Layer | Cover Lens | Glass | Thickness: 1.8mm |
| Second Layer | Sensor | ITO Glass | Thickness: 1.1mm |
| Tail type | FPC | FPC | Gold-Plated |

3.2 Specification

| Item | Dimension | Unit |
|---------------------|--|------|
| Dimensional Outline | 387.00 (L) ×235.00 (W) ×3.30 (T) | mm |
| Viewing Area | 345.23 (L) ×194.54 (W) | mm |
| FPC Length | 103.13 | mm |

Note:Sensor Source: in house

3.3 Control board

| Item | Specification |
|-------------|------------------------|
| Model | SW4101DS-DY20-A |
| IC | SiW,SW4101D |
| Interface | USB,I2C |
| Dimensional | 50(L) X 30(W) X1.6(T) |
| OS | Windows,Android, Linux |
| FW Version | TBD |
| Input Mode | Finger |

Remark: Regarding the IC specification, please refer the IC data sheet from supplier

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This chapter describes the
electrical and optical spec for
touch panel

4

Characteristics

4 Characteristics

4.1 Environmental Conditions

| Item | Specification | | Remark |
|----------------------------------|---------------|-------------------------|----------------------------|
| Operating temperature & Humidity | -10°C~+60°C | -10°C~+40°C / 10%-90%RH | Panel only, Non-condensing |
| | | +40°C~+60°C / 10%-60%RH | |
| Storage temperature & Humidity | -20°C~+70°C | -20°C~+60°C / 10%-90%RH | |
| | | +60°C~+70°C / 10%-60%RH | |

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 Electrical Characteristics

| Item | Specification | Remark |
|----------------|------------------------|--|
| Touch point | 10-Points | The number of touch points simultaneously detect |
| Max voltage | DC 5V max | |
| Reporting rate | TBD | |
| ESD | Contact: 4K Air: 6K | |

4.3 Mechanical Characteristics

| Item | Specification | Remark |
|-----------------|-------------------------|---------------------|
| Input method | Finger or exclusive pen | |
| Operation force | ≤10g | finger input |
| Hardness | ≥6H | Pressure 500gf test |

4.4 Optical Characteristics

| Item | Specification | Remark |
|--------------|---------------|------------------------|
| Transparency | ≥85% | Visible light at 550nm |

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This chapter describes the appearance standard for touch panel

5

Appearance Inspection

5 Appearance Inspection

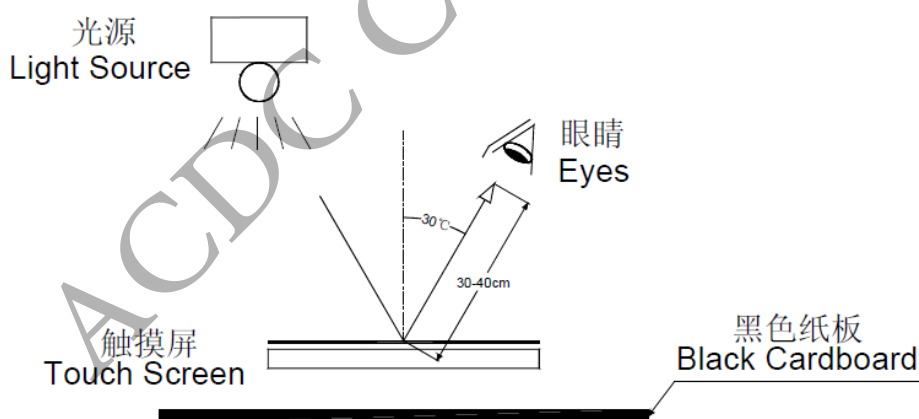
5.1 Inspection Regulation

5.1.1 Inspection Scope

- 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.
- 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 Inspection Condition

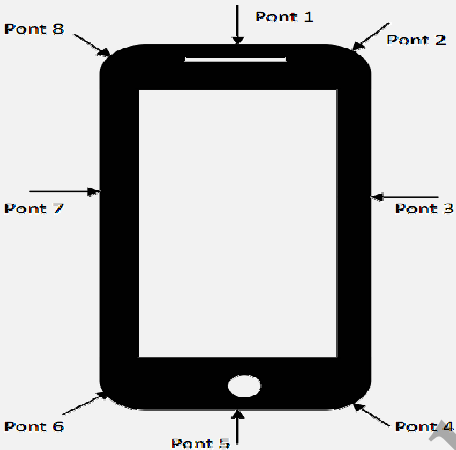
- Staff is 1.0 and above visual acuity in healthy adults (including those using glasses). Source of the lighting for inspection is 20-40 W cool white color fluorescent light.(Required inspection tables illumination between 1000 ~ 1200 Lux) , and viewing distance for inspection between eyes and product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



5.2 Dot Defects and Linear Defects

| Inspection | Criteria | | | | | Inspection | Defect | | | | | | | | | | | | | |
|---|--|--------------|---|---------------|----------------|-------------|----------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Impurities, stains, bubbles, black and white spots, dents, bumps, fibers, hairs, scratches, etc. | TP Size<17"P+G | | | | | Visual/film | Slight/C | | | | | | | | | | | | | |
| | Point defects | | | | | | | | | | | | | | | | | | | |
| | Size Φ mm | | VA allowed number | | Non-VA allowed | | | | | | | | | | | | | | | |
| | Black/blue or other heterochro mia points | Φ≤0.15 | Excluded, but cannot be concentrated | | Excluded | | | | | | | | | | | | | | | |
| | | 0.15<Φ≤0.25 | A area 0 | B area N≤2 | | | | | | | | | | | | | | | | |
| | | 0.25<Φ | 0 | 0 | | | | | | | | | | | | | | | | |
| | White dots or other points of the same color | Φ≤0.15 | Excluded, but cannot be concentrated | | Excluded | | | | | | | | | | | | | | | |
| | | 0.15<Φ≤0.30 | A or B area N≤2 | | | | | | | | | | | | | | | | | |
| | | 0.30<Φ | 0 | 0 | | | | | | | | | | | | | | | | |
| | line defect | | | | | | | | | | | | | | | | | | | |
| | L (mm) | W (mm) | VA allowed number | | Non-VA allowed | | | | | | | | | | | | | | | |
| | / | W≤0.015 | Excluded, but cannot be concentrated | | Excluded | | | | | | | | | | | | | | | |
| | L≤8 | 0.015≤W≤0.08 | 3 | | | | | | | | | | | | | | | | | |
| | / | W>0.08 | In point form | | | | | | | | | | | | | | | | | |
| Any two acceptable defects or 50mm spacing requirements | | | | | | | | | | | | | | | | | | | | |
| Different color rolls are not allowed | | | | | | | | | | | | | | | | | | | | |
| Total number of single product points and linear defects N≤4 | | | | | | | | | | | | | | | | | | | | |
| <table><tr><td>B</td><td>B</td><td>B</td><td>B</td></tr><tr><td>B</td><td>A</td><td>A</td><td>B</td></tr><tr><td>B</td><td>A</td><td>A</td><td>B</td></tr><tr><td>B</td><td>B</td><td>B</td><td>B</td></tr></table> | | | | | B | B | B | B | B | A | A | B | B | A | A | B | B | B | B | B |
| B | B | B | B | | | | | | | | | | | | | | | | | |
| B | A | A | B | | | | | | | | | | | | | | | | | |
| B | A | A | B | | | | | | | | | | | | | | | | | |
| B | B | B | B | | | | | | | | | | | | | | | | | |

5.3 Cover Criteria

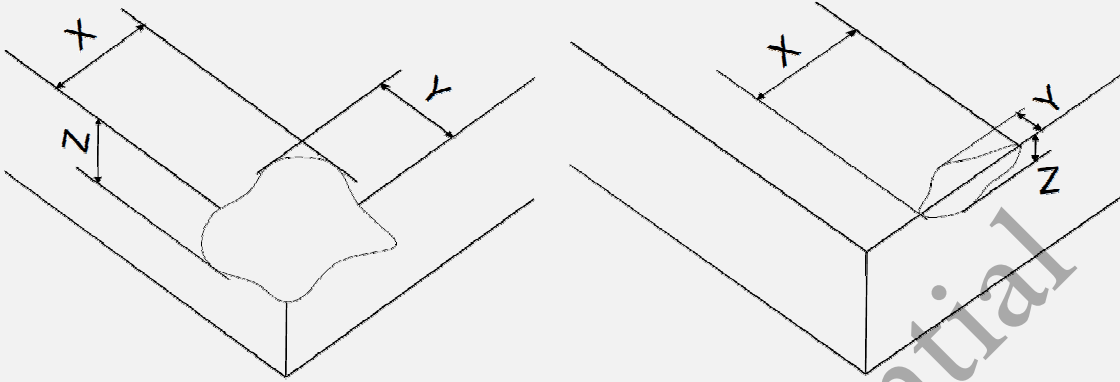
| Item | CRITERIA (mm) |
|--------------------------|--|
| Logo Printing Tilt Angle | $L \leq 10$, $A \leq 3^\circ$, $10 < L \leq 20$, $A \leq 1.5^\circ$ |
| Flatness | <p>The degree (height) of warping accepted in any direction or plane: $H \leq 0.25\%$, OK ; $H > 0.25\%$, NG.</p>  |
| BM Printing Area | <p>Printing area has obvious light-leaking phenomenon caused by scratching is not acceptable.</p> <p>Printing pinhole/transmission: $\Phi \leq 0.30$ is acceptable; regardless of the number, but not allowed to be concentrated.</p> <p>Cover window area edge printing raised or indented, width is not more than 0.2 is acceptable.</p> <p>Cover printing in the dirt, the shadow, is not acceptable; may refer to limit sample.</p> |
| LOGO Printing | <p>Color, font, position, size conform to the requirements of the drawings or samples.</p> <p>Even transmission of light; refer to limit sample.</p> <p>There shall be no ghosting, defect; refer to limit sample.</p> |
| CNC edge serrated | Glass CNC edge serrated, Depth $H \leq 0.50$ is acceptable. |

5.4 Cover Glass Chipping

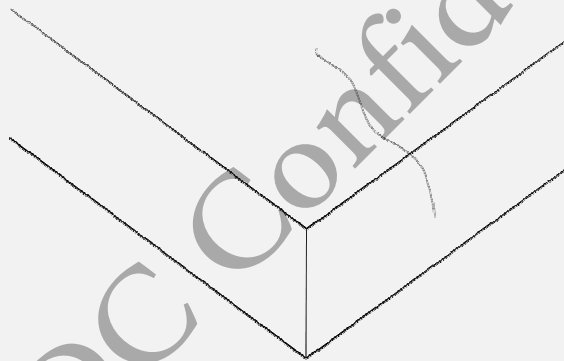
Edge and corner of the front fragment does not allow;

Corner fragment : $X \leq 0.5\text{mm}$, $Y \leq 0.5\text{mm}$ and $Z \leq 1/2GT$, 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.)



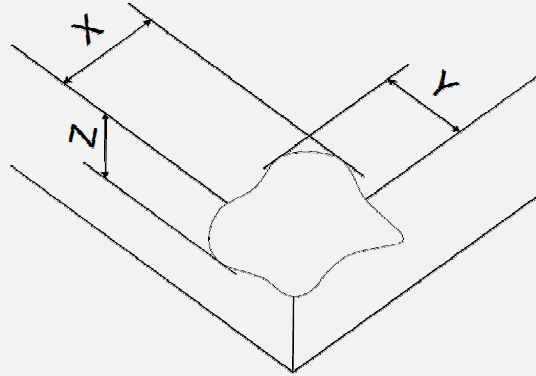
Cracking: T/P is regarded as defective.



5.5 Sensor Glass Chipping

Corner fragment : $X \leq 3.0\text{mm}$, $Y \leq 3.0\text{mm}$ and $Z \leq GT$, it is ignored.

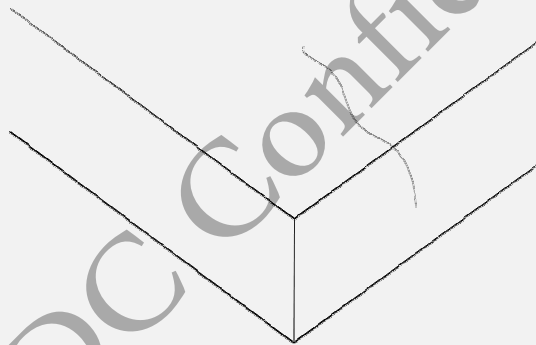
(Remark: If the chipping seriously affect the product's features, T / P is non-conforming.)



Side fragment : $X \leq 4.0\text{mm}$, $Y \leq 2.0\text{mm}$ and $Z \leq GT$ it is ignored.

(Remark: If the chipping seriously affect the product's features, T / P is non-conforming.)

Cracking: T/P is regarded as defective.



5.6 PET Protective Film

| CRITERIA (mm) | | DECISION |
|---|-----------------------------------|--------------------------------------|
| Dot-like Foreign Matter | $\Phi \leq 0.25$ | Excluded, but cannot be concentrated |
| | $0.25 < \Phi \leq 0.35$ | 10 |
| | $\Phi > 0.35$ | 0 |
| Air bubble Concave and convex point | $\Phi \leq 0.5$ | Excluded, but cannot be concentrated |
| | $0.5 < \Phi \leq 1.0$ | 7 |
| | $\Phi > 1.0$ | 0 |
| Scratch | $W < 0.05, L \leq 20$ | Excluded, but cannot be concentrated |
| | $0.05 \leq W \leq 0.1, L \leq 15$ | 10 |
| | $W > 0.1$ | 0 |
| Note: any two acceptable defects spacing requirement $\geq 20\text{mm}$ | | |

5.7 Others

- This specification is considered as basic on the products, but details are subject to discussion upon individual customer requirement.

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This chapter describes the
reliability test for touch panel

6

Reliability Test

6 Reliability Test

- Scope :
 - 1) The following touch screen reliability test should be carried out after placing the screen on the plate in a non-powered state.
 - 2) The following touch screen reliability test should be carried out in standard environment ($23^{\circ}\text{C}\pm 5^{\circ}\text{C}$, $65\%\text{RH}\pm 10\%\text{RH}$ and $860\text{-}1060\text{hPa}$), unless there are special requirements or conditions otherwise specified.

6.1 Environment Test

6.1.1 Heat Resistance

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

6.1.2 Cold Resistance

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

6.1.3 Temperature and Humidity Resistance

- The requirements in “4.2 Electric characteristics”, “Operation force” of the item “4.3 Mechanical characteristics” shall be satisfied after exposing samples at 60°C , $90\%\text{RH}$ for 240h for 1 cycle, and each item should be measured after exposing them in normal temperature and humidity for 24h.

6.1.4 Thermal Shock

- The requirements in “4.2 Electric characteristics”, “Operation force” of the item “4.3 Mechanical characteristics” shall be satisfied after exposing samples at -20°C (30min) to 70°C (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 Endurance Test

6.2.1 Flexible Pattern Heat Seal Peeling Strength Test

- X: 1000g (peeling by 180°)
- Y: 500g (peeling upward by 90°)
- Z: 150g (peeling for being vertical with x and y direction)
- Note: speed 25mm/min
- The requirements in the item “4.2 Electric characteristics” shall be satisfied.

6.2.2 Flexible Pattern Bending Resistance Test

- Bending 3 times or more by bending radius R1mm. The requirements in the item “4.2 Electric characteristics” shall be satisfied.

6.2.3 Flexible Pattern Resistance to Inserting

- 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 Impact Resistance Test

- Using a 227g, $\Phi 38$ mm 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 Packaging Drop Test

- 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).

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This chapter describes of
storage, cleaning, assembly,
operation and other matters
needing attention

7

Product Handling and Usage Instructions

7 Product Handling and Usage Instructions

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 Storage

- 1) We suggest the product should be kept at a temperature of $23\pm3^{\circ}\text{C}$ and humidity of 40%~70%RH. The product storage period should not be more than 6 months.
- 2) It is suggested to keep the materials no more than 3 months in normal conditions (indoors, normal heat and humidity conditions).
- 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.
- 4) Do not store a touch panel in direct sunlight.
- 5) Touch screens should be stored in original packaging.

7.2 Cleaning

- 1) When cleaning the touch panel, refrain from using any kind of strongly acidic, alkaline or organic chemical solvent.
- 2) In case the panel requires cleaning, the use of neutral detergent or isopropyl alcohol is suggested.
- 3) When cleaning the touch panel, always use a soft cloth to avoid abrasions.

7.3 Handling and Assembly

- 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.
- 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.
- 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.
- 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.
- 5) When handling the FPC or COF, excessive pulling force, strain or tension must be avoided in order to prevent damage or product defects.
- 6) Once removed from the original package, touch screens are not to be stacked. The edges may cause scratching.
- 7) Do not stack heavy objects on the touch screen.

7.4 Operation

- 1) The panel must be operated in a stable environment; abrupt change of the environmental conditions may cause the malfunction of the panel.
- 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).
- 3) Do not insert or remove the interface connector while the touch panel is operating.
- 4) Please avoid any sharp edged or hard objects hitting the touch panel when in operation.

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This chapter describes
the Rule of Serial
Number

8

Regulation of markingcode

8 Regulation of marking code

DY XXX X X - XXXX
A B C D E

Notes:

A: Customer Code

B: Product size (In Diagonal Inches)

C: Product structure (PG=1 / GG=2)

D: Product Viewing Area Proportion (S = Standard / W = Wide Format)

E: Product Model Number

For Example: "DY2152W-1471" means a 21.5-inch Widescreen projected capacitive GG screen produced by ACDC, model number 1471.

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This chapter contains packing

9

Packing Specification

9 Packing Specification

9.1 Packing method

☒ 单纸箱(single carton box) ☐ 双层纸箱(double carton box) ☐ 木箱(wooden box)

9.2 Inner packing



9.3 Exterior packing



final big box(10PCS)

9.4 Label

| | | | | | | |
|-------|-------|-----|-------|----------|-------|-------|
| 日期: | _____ | 年 | _____ | 月 | _____ | 日 |
| 供应商: | _____ | 数量: | _____ | 5 | 件 | _____ |
| 订单号: | _____ | | | | | |
| 机种编号: | _____ | | | | | |

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This chapter contains
attachments

10

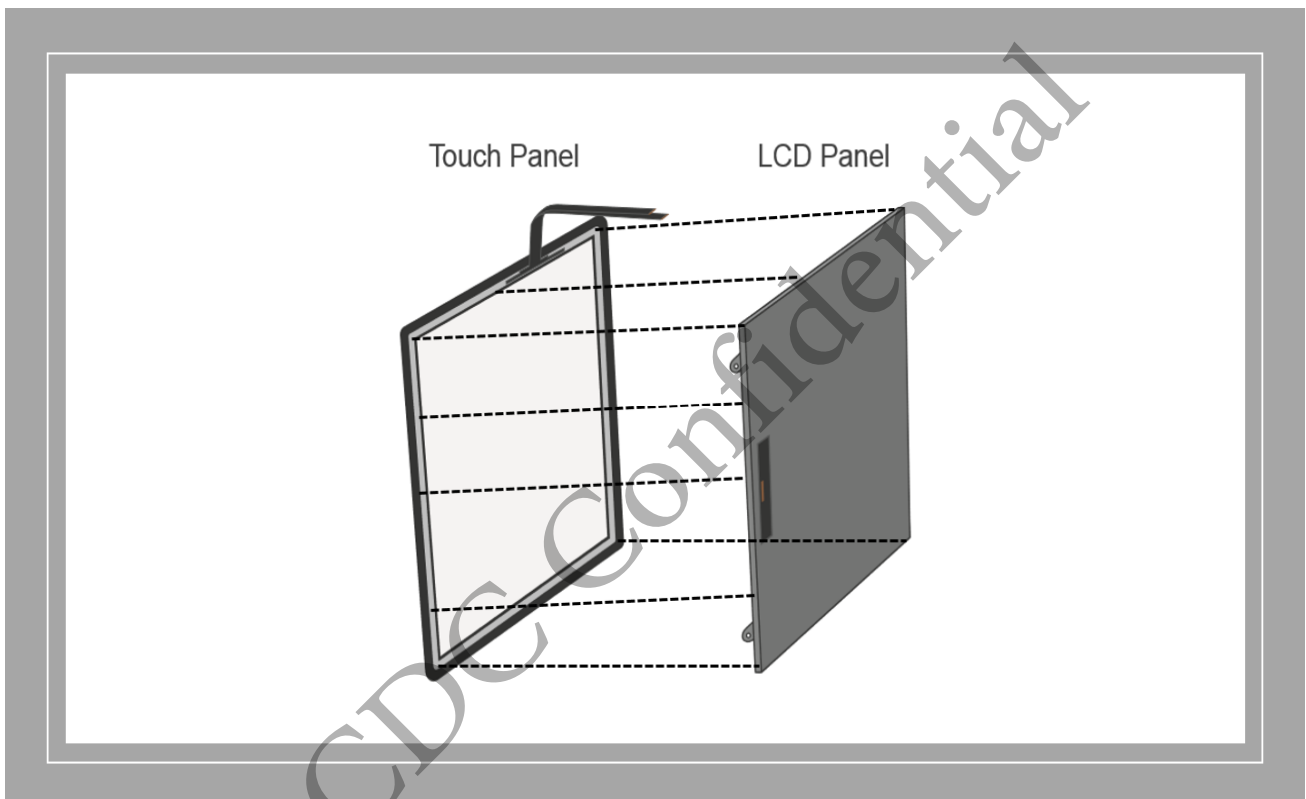
Attachment

10 Attachment

10.1 Touch Panel & LCD Assembly

ACDC Projected capacitive touch screens support wide range of LCD types to be installed, however you may concern following factor while your installation process.

The recommended distance between Touch Panel & LCD screen after installation could be **1mm at least or 2mm above** in order to prevent from sensor patterns being interfered by LCD noise.



10.2 Product pictures

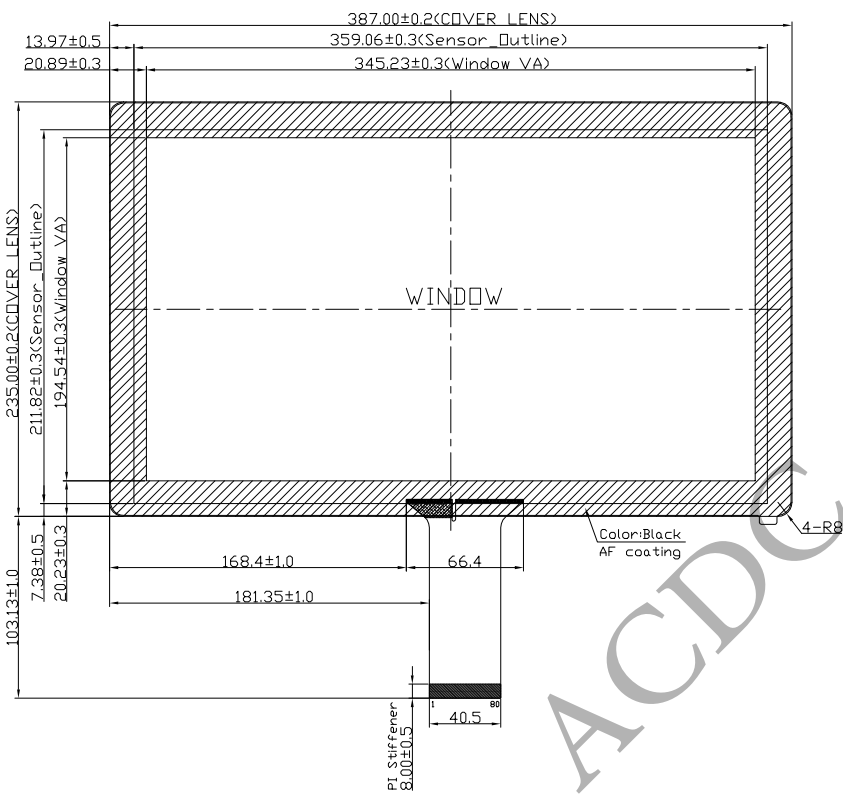
Front

Back

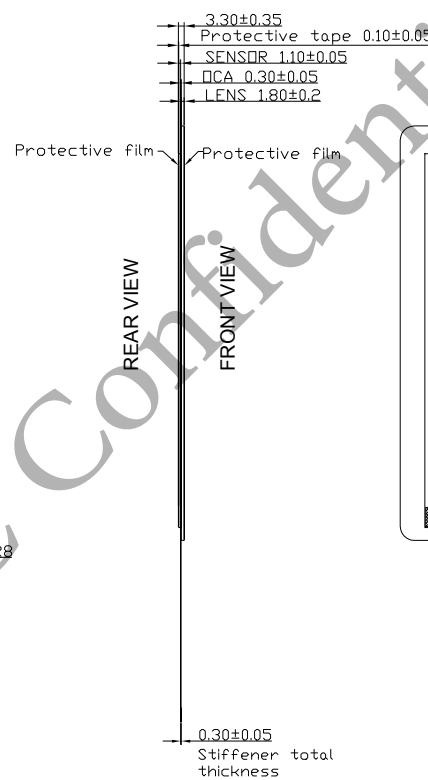
10.3 Engineering/ Mechanical Drawing

| F | 8 | | 7 | | 6 | | 5 | | 4 | | 3 | | 2 | | 1 | | F |
|---|------|---------|---|--|---|------|------|------|---------|--|---|--|------|------|---|--|---|
| | MARK | HISTORY | | | | NAME | DATE | MARK | HISTORY | | | | NAME | DATE | | | |
| | △1 | | | | | | | △6 | | | | | | | | | |
| | △2 | | | | | | | △7 | | | | | | | | | |
| | △3 | | | | | | | △8 | | | | | | | | | |
| | △4 | | | | | | | △9 | | | | | | | | | |
| | △5 | | | | | | | △10 | | | | | | | | | |

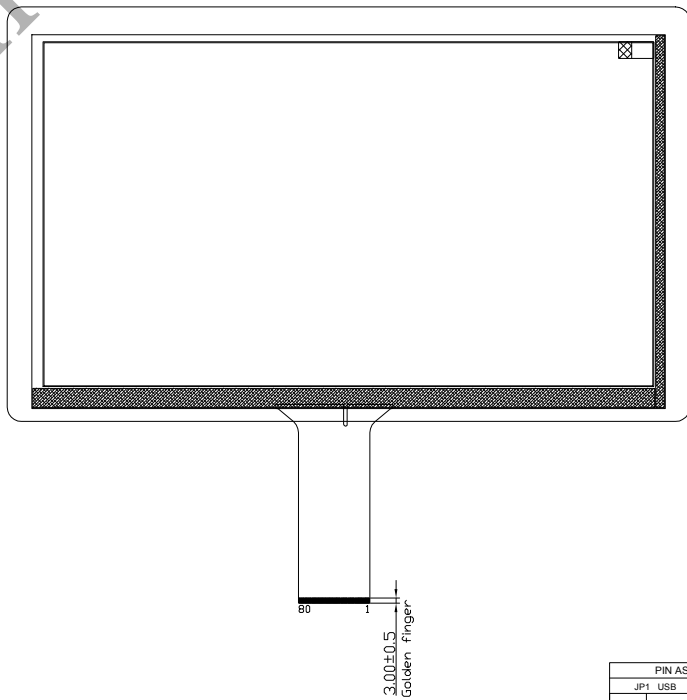
FRONT VIEW



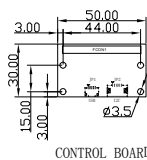
SIDE VIEW



REAR VIEW



- Notes:
- 1. Operating Temperature: -10℃~+60℃;
Storage Temperature: -20℃~+70℃。
 - 2. Hardness ≥ 6H。
 - 3. Transparency ≥ 85%。
 - 4. Unspecified Tolerance: ±0.30。
 - 5. ROHS Compliance。



| PIN ASSIGNMENT | | | |
|----------------|------|---------|------|
| JP1 USB | | JP2 I2C | |
| Pin | Name | Pin | Name |
| 1 | SV | 1 | RST |
| 2 | D- | 2 | INT |
| 3 | D+ | 3 | SCL |
| 4 | GND | 4 | SDA |
| 5 | GND | 5 | 3.3V |
| | | 6 | GND |

| | | | | | | | | | |
|--------------|-----|------|------------|-------------------|-------|------|-------|--|--|
| DY1562W-4262 | | | | Customer Part No. | SHEET | UNIT | SCALE | ver.1  | |
| | | | | ACDC119 | A4 | mm | 1:1 | | |
| DESIGN | yjl | DATE | 2019.11.19 | 深圳亚德方案科技有限公司 | | | | | |
| CHECK | | DATE | | | | | | | |

SW4101DS-DY20

ACDC® LG-Siliconworks SW4101D Projected Capacitive
Multi-Touch Controller board

Approval Sheet

Ver. 1.2

Revision History

| Date | Version | Description |
|------------|---------|---------------------------------|
| 2018-04-25 | V1.0 | First version |
| 2018-07-02 | V1.1 | Change TVS |
| 2018-04-30 | V1.2 | Add second source of LDO in BOM |

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Introduction

Shipping Damage

- On receipt of ACDC Projective Capacitive Multi Touch Controller Product, if you notice damage to the shipping carton, or concealed damage, be sure to save all packing materials for later inspection by the carrier, who is responsible for any shipping damage.

Warranty

- If failure occurs during the warranty period of the product, please contact your retailer from which the product was purchased.

Safety Information

- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.



The symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

ACDC Confidential

This chapter describes the touch controller IC features and the new technologies it supports.

1

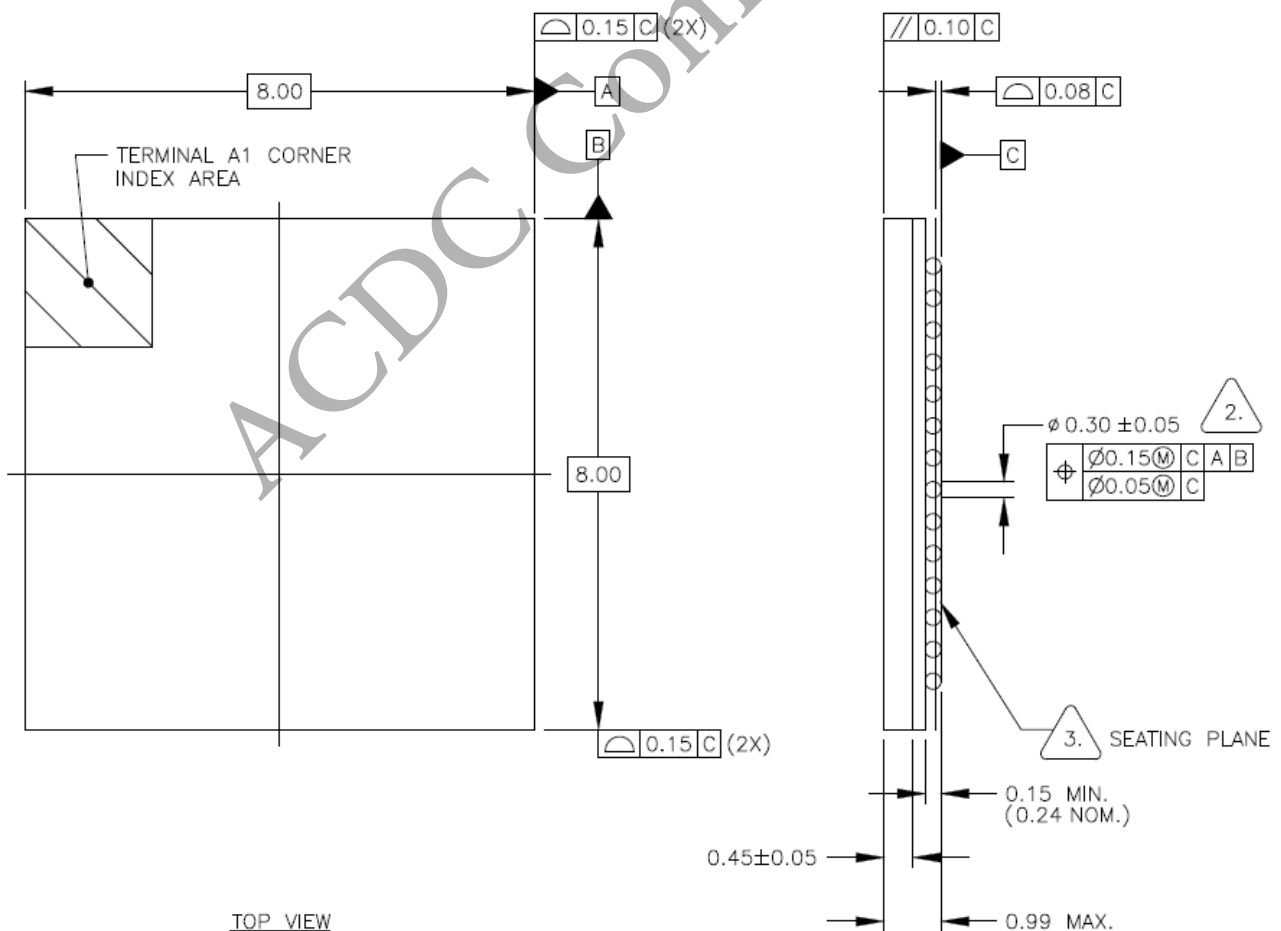
Touch Controller IC Specification

1.1 Main features of Controller IC

Key feature

- The IC architecture is Differential + CDM, has strong anti-interference ability and sensor pattern compatibility.
- Max Rx channel number is 47, max Tx channel number is 33
- Max size support up to 15"
- Using TDMA hardware algorithm, the algorithm is more efficient and accurate
- Using frequency hopping algorithm to automatically switch frequency when encountering interference
- High speed ADC converter x 4
- Support USB, I2C, UART and SPI interface
- Support Windows 8 certification
- Fast and efficient service support

1.2 Package Dimension



ACDC Confidential

This chapter describes the touch
controller Board features

2

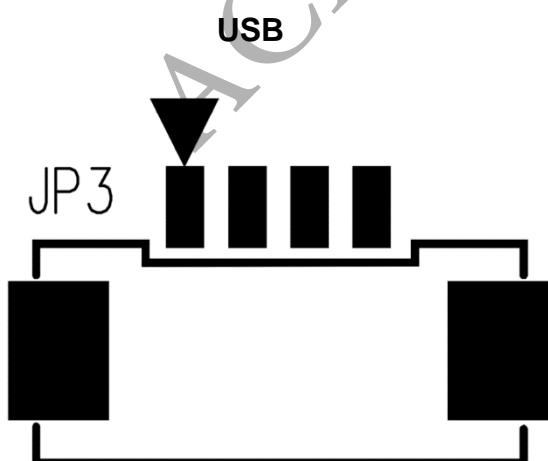
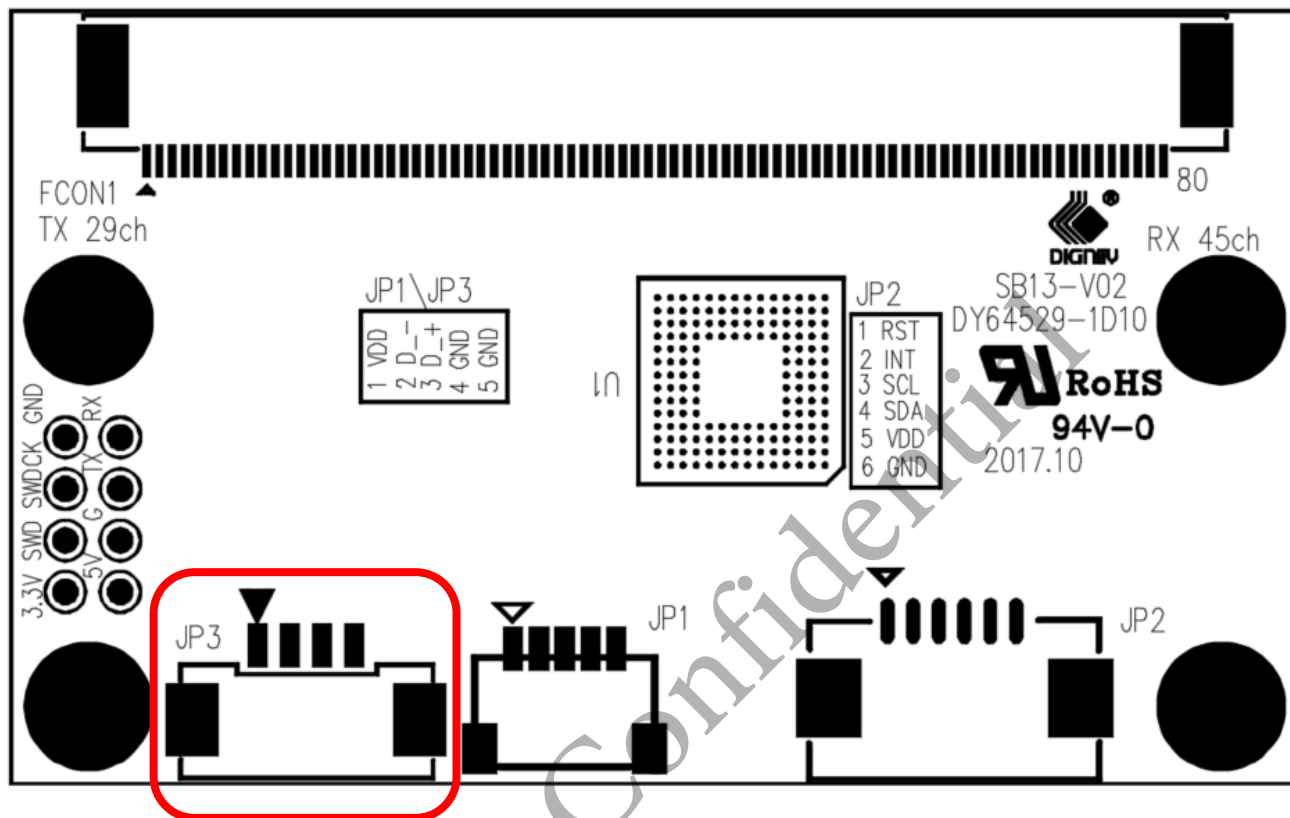
Touch Control Board Specification

2.1 Specification

| Features | Descriptions |
|-------------------------|---|
| Circuit Board Dimension | 30mm x 50mm |
| PCB Thickness | 1.6T |
| IC | SW4101D (160 BGA) |
| FW | N/A |
| Channels | Max.Tx:29 Rx:45 channels |
| Input Voltage | Typical 5V |
| Linearity/Accuracy | Line Drawing Accuracy:1pt ±1mm Offset/10mm Touch(point)Accuracy:1pt ±1mm (Refer to Microsoft Windows 8 Logo regulation and channel pitch should be 5mm) |
| Operating Temperature | -40 to 85 °C |
| Storage Temperature | -40 to 85 °C |
| Relative Humidity | 95% at 60 °C, RH Non-condensing |
| Interface | USB 1.1 / USB 2.0 Full-Speed Operation |
| Report rate(points/sec) | >100Hz |
| Response time | Average <25ms |
| EMS | ESD: Max. Air: ±30kV Connect: ±15kV |
| | EFT: Max ±4kV |
| | CS: IEC61000-4-6 Level 3(Max: 10Vrms) |

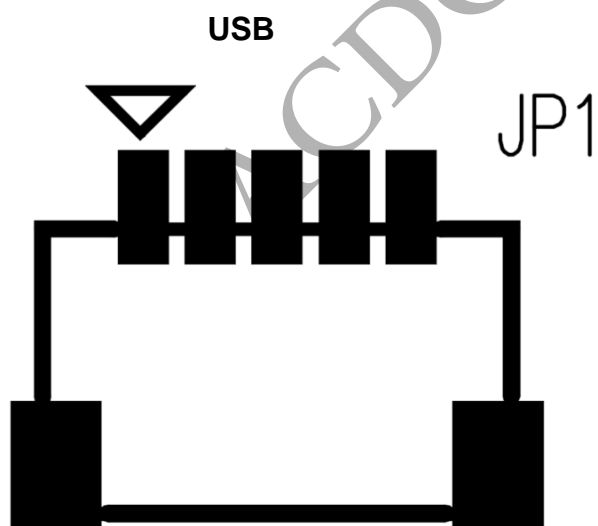
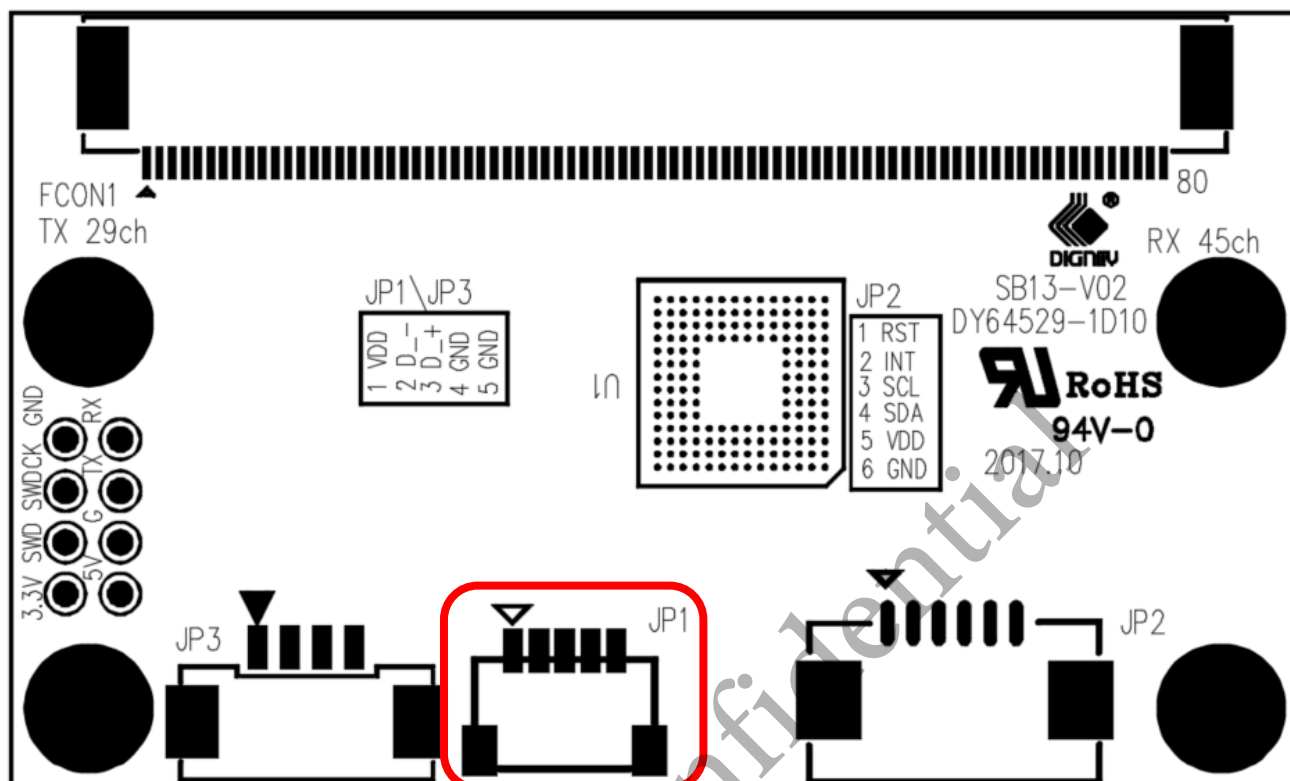
2.2 Connectors Description

2.2.1 USB Connector(JP3)



| Pin | Signal Name |
|-----|----------------|
| 1 | 5V |
| 2 | D ⁻ |
| 3 | D ⁺ |
| 4 | GND |

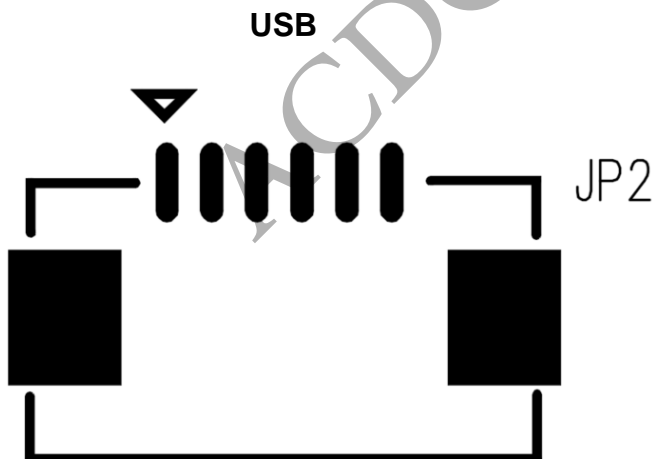
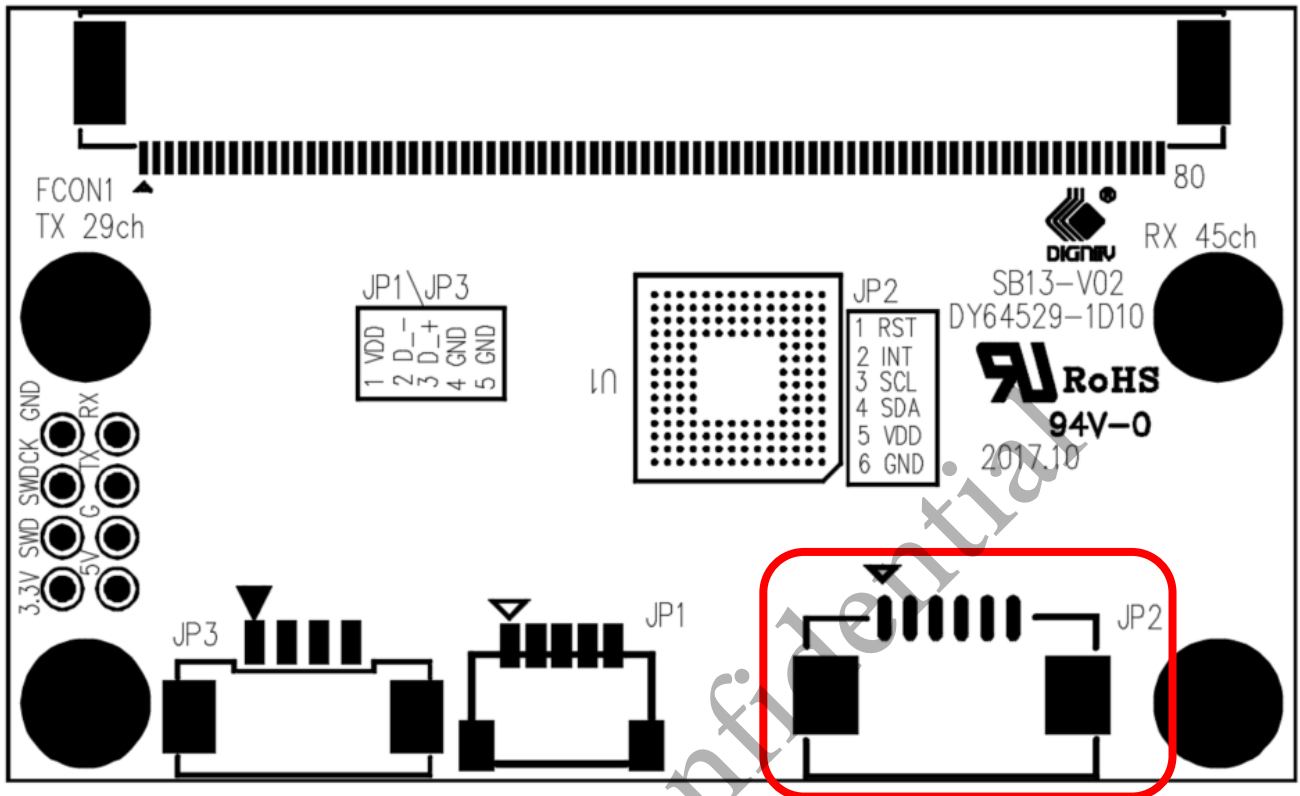
2.2.2 USB Connector(JP1)



JP1

| Pin | Signal Name |
|-----|-------------|
| 1 | 5V |
| 2 | D- |
| 3 | D+ |
| 4 | GND |
| 5 | GND |

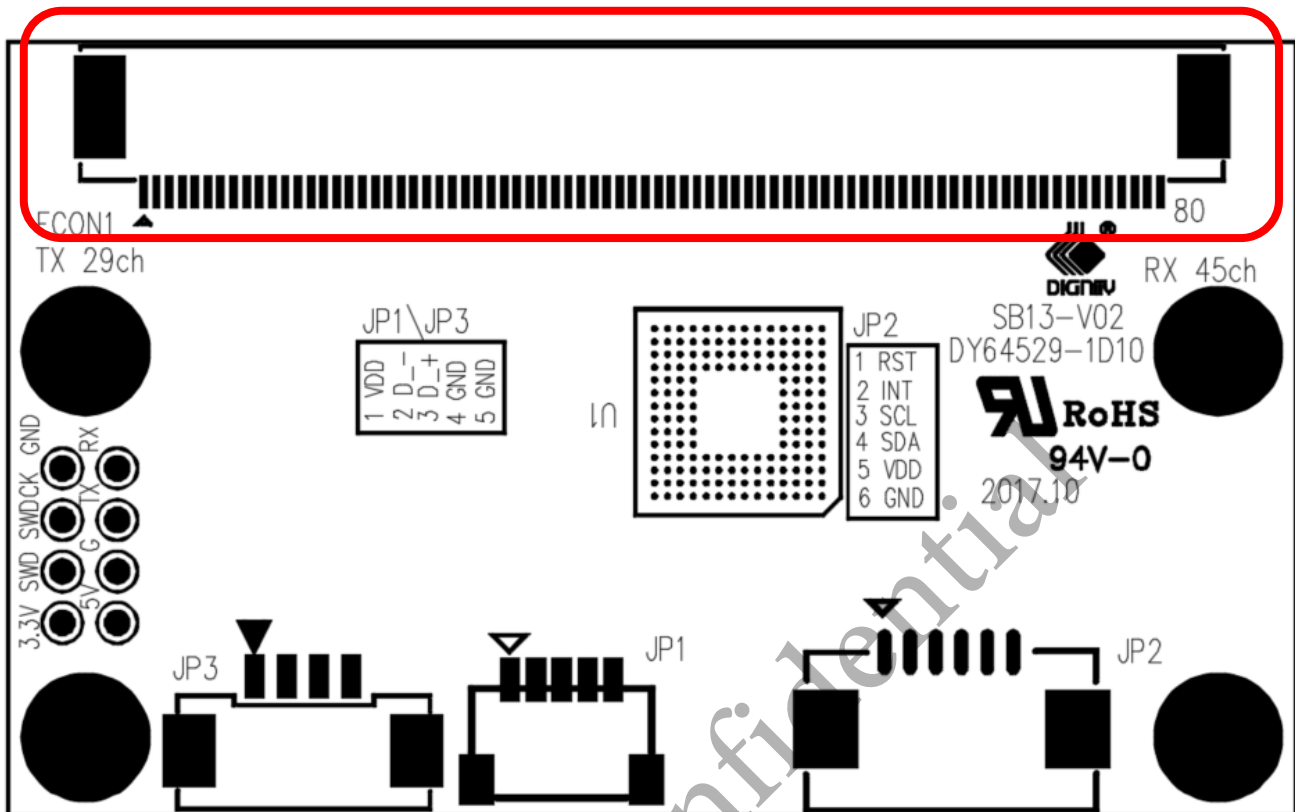
2.2.3 I2C Connector(JP2)



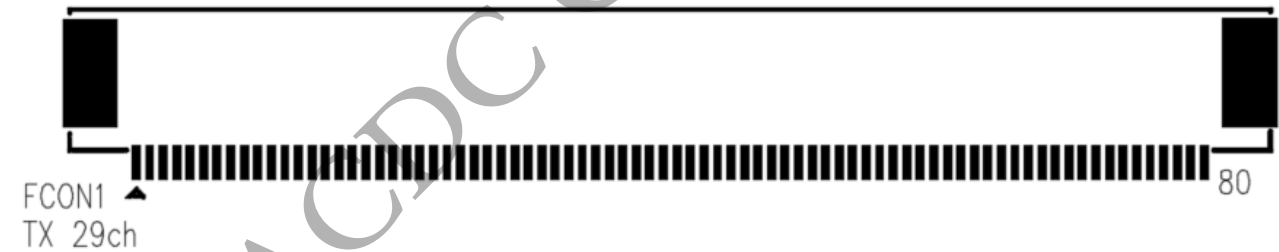
JP2

| Pin | Signal Name |
|-----|-------------|
| 1 | RST |
| 2 | INT |
| 3 | SCL |
| 4 | SDA |
| 5 | 3.3V |
| 6 | GND |

2.2.4 RX & TX FCON(FCON1)



RX & TX

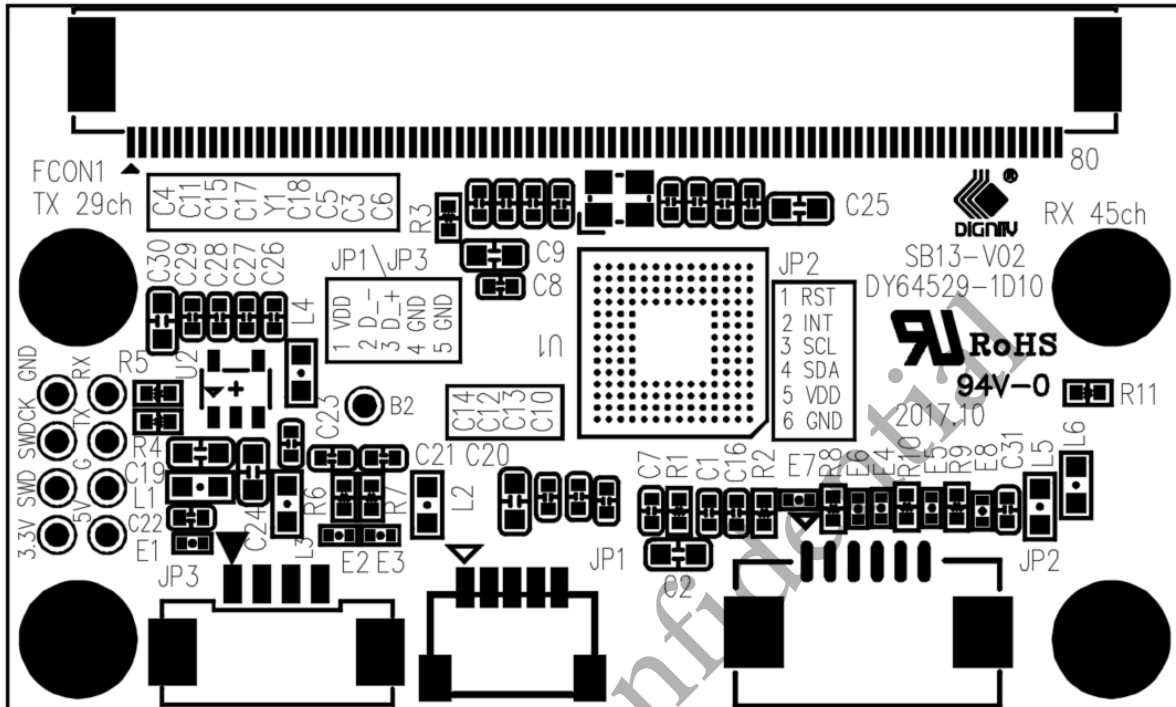


FCON1

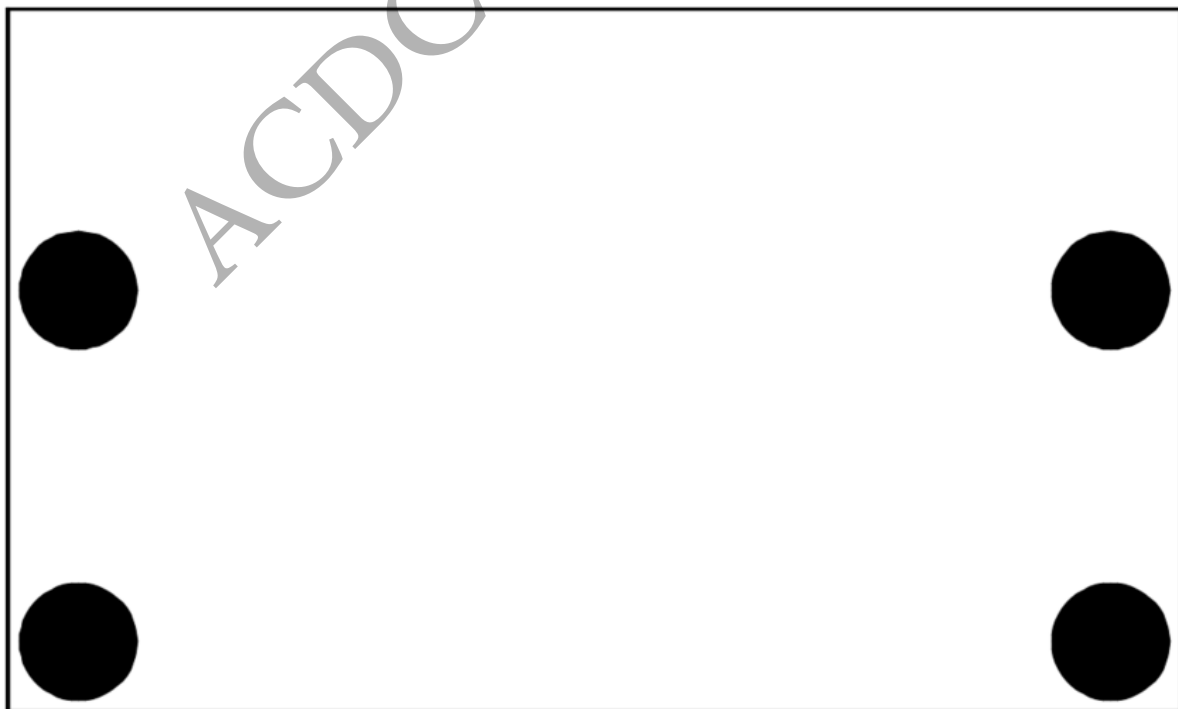
| Pin | Signal Name | Pin | Signal Name | Pin | Signal Name | Pin | Signal Name |
|-----|-------------|-----|-------------|-----|-------------|-----|-------------|
| 1 | GND | 21 | TX20 | 41 | RX07 | 61 | RX27 |
| 2 | TX01 | 22 | TX21 | 42 | RX08 | 62 | RX28 |
| 3 | TX02 | 23 | TX22 | 43 | RX09 | 63 | RX29 |
| 4 | TX03 | 24 | TX23 | 44 | RX10 | 64 | RX30 |
| 5 | TX04 | 25 | TX24 | 45 | RX11 | 65 | RX31 |
| 6 | TX05 | 26 | TX25 | 46 | RX12 | 66 | RX32 |
| 7 | TX06 | 27 | TX26 | 47 | RX13 | 67 | RX33 |
| 8 | TX07 | 28 | TX27 | 48 | RX14 | 68 | RX34 |
| 9 | TX08 | 29 | TX28 | 49 | RX15 | 69 | RX35 |
| 10 | TX09 | 30 | TX29 | 50 | RX16 | 70 | RX36 |
| 11 | TX10 | 31 | GND | 51 | RX17 | 71 | RX37 |
| 12 | TX11 | 32 | GND | 52 | RX18 | 72 | RX38 |
| 13 | TX12 | 33 | GND | 53 | RX19 | 73 | RX39 |
| 14 | TX13 | 34 | GND | 54 | RX20 | 74 | RX40 |
| 15 | TX14 | 35 | RX01 | 55 | RX21 | 75 | RX41 |
| 16 | TX15 | 36 | RX02 | 56 | RX22 | 76 | RX42 |
| 17 | TX16 | 37 | RX03 | 57 | RX23 | 77 | RX43 |
| 18 | TX17 | 38 | RX04 | 58 | RX24 | 78 | RX44 |
| 19 | TX18 | 39 | RX05 | 59 | RX25 | 79 | RX45 |
| 20 | TX19 | 40 | RX06 | 60 | RX26 | 80 | GND |

2.3 2D Placement Drawing

TOP VIEW



BOTTOM VIEW

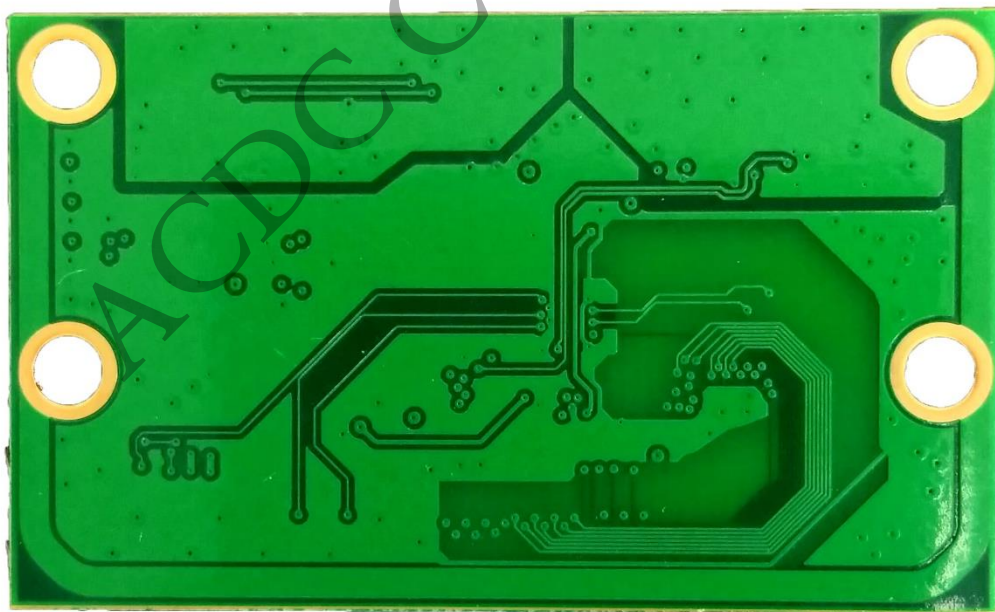


2.4 Photos

TOP VIEW



BOTTOM VIEW



2.5 Schematics

2.6 Bill of Material List

| SW4101DS-DY20 | | | | | | | 版本 | A |
|---------------|-------|--|-----------------------|-------------------|---------------------------|-----------|----|-----|
| 序号 | 名称 | 图号 | 规格 | 封装 | 料号 | 品牌 | 数量 | 备注 |
| 1 | 贴片电阻 | R6,R7,R11 | 0Ω,±5% | R1005(0402) | 0402,0Ω,±5% | WALSIN | 3 | |
| 2 | 贴片电阻 | R9,R10 | 4.7K/472,±5% | R1005(0402) | 0402,4.7K/472,±5% | WALSIN | 2 | |
| 3 | 贴片电阻 | R2,R8 | 10K/103,±5% | R1005(0402) | 0402,10K/103,±5% | WALSIN | 2 | |
| 4 | 贴片电阻 | R3,R4,R5 | 100K/104,±5% | R1005(0402) | 0402,100K/104,±5% | WALSIN | 3 | |
| 5 | 贴片电容 | C17,C18 | 22pF/220/50V,±5% | C1005(0402) | 0402,22pF/220/50V,±5% | WALSIN | 2 | NPO |
| 6 | 贴片电容 | C20,C21 | 150pF/151/50V,±10% | C1005(0402) | 0402,150pF/151/50V,±10% | WALSIN | 2 | NPO |
| 7 | 贴片电容 | C1,C3,C4,C5,C6,C7,C11,C12,C15,C16,C23,C26,C27,C28, | 0.1uF/104/25V,±10% | C1005(0402) | 0402,0.1uF/104/25V,±10% | YAGEO | 14 | |
| 8 | 贴片电容 | C8,C10,C13,C22,C29,C31 | 1uF/105/10V,±10% | C1005(0402) | 0402,1uF/105/10V,±10% | SANMSUN G | 6 | |
| 9 | 贴片电容 | C2,C9,C14,C24,C25,C30 | 4.7uF/475/10V,±10% | C1608(0603) | 0603,4.7uF/475/10V,±10% | SANMSUN G | 6 | |
| 10 | 贴片磁珠 | L1,L2,L3,L4,L5,L6 | 600ohm, 1A | L1608(0603) | 1608KF-601T10 | TAI-TECH | 6 | |
| 11 | TVS 管 | E1,E2,E3,E4,E5,E6,E7,E8 | N05BT1006-H | T1006P2-7 | N05BT1006-H | Formosa | 8 | 双向 |
| 12 | 触控IC | U1 | SW4101D | 160BGA | SW4101D | SIW | 1 | |
| 13 | LDO | U2 | 3.3V/500mA | SOT-23-5 | RT9013-33GB | RICHTEK | 1 | 替代料 |
| | | | 3.3V/600mA | TSOT-23-5 | RT9080-33GJ5 | RICHTEK | | |
| 14 | 贴片晶振 | Y1 | 2520/24MHZ/20PPM 20PF | 2520 | 2520/24MHZ/20PPM 20PF | JKX | 1 | |
| 15 | 连接器 | JP1 | 5PIN,1mm PITCH | 5PIN,1mm PITCH | 1.0T-1-5AW条形卧式贴片/5P,1.0mm | 杨睿电子 | 1 | |
| 16 | 连接器 | JP3 | 4PIN,1.25mm PITCH | 4PIN,1.25mm PITCH | 1.25MM 4pin 卧式 | 杨睿电子 | 1 | |
| 17 | 连接器 | JP2 | 6PIN,1.0mm PITCH | 6PIN,1.0mm PITCH | (下接, 翻盖)1.0,6P | 杨睿电子 | 1 | |
| 18 | 连接器 | FCON1 | 80PIN,0.5mm PITCH | 80PIN,0.5mm PITCH | (下接, 翻盖)0.5,80P | 杨睿电子 | 1 | |
| 19 | 标签纸 | 标签纸 | 30*10mm | 30*10mm | 标签纸 (30*10mm) | 国产 | 1 | 不导电 |
| 20 | PCB | SW4101DS-DY20 | 详见工艺书 | | SW4101DS-DY20 | | 1 | |
| | | | | | | | 总量 | 63 |
| 绘制 | 审核 | Notes | | | 日期 | | | |
| | | USB&I2C | | | 2019/4/30 | | | |

2.7 Reliability Test

| Number | Test Item | Test Content | Standard |
|--------|---|--|--|
| 1 | Low Temperature Test | -5°C/ 24hrs test in charge state | IEC60068-2-1 Test Ab: Cold Test. |
| 2 | High Temperature Test | 65°C/ 24hrs test in charge state | IEC 60068-2-2 Test Bb: Dry Heat Test. |
| 3 | High Temperature & Humidity Test | 65°C, 95% / 24hrs test in charge state | IEC 60068-2-2, Test Bb: Dry Heat Test. IEC 60068-2-3, Test Ca: Damp Heat steady state Test. |
| 4 | Storage test | -40°C/ 24hrs for storage test. | IEC 60068-2-1 Test Ab: Cold test |
| 5 | | 85°C, 95% / 24hrs for storage test. | IEC60068-2-56, Test Cb: Damp Heat Steady State Test |
| 6 | Package drop test | One corner, three edges, six faces. | ISTA 2A, IEC-60068-2-32 Test Ed |
| 7 | Electrostatic Discharge Immunity Test (ESD) | Air: +/-15kV Contact: +/-8kV | IEC61000-4-2 Electrostatic Discharge Immunity Test |

2.8 Engineering Drawing

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This chapter describes the
Packing Information

3

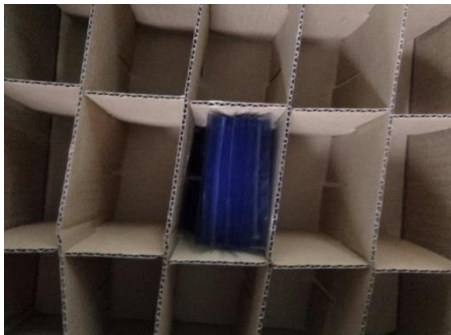
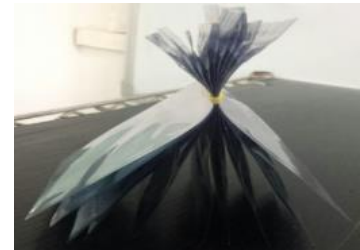
Packing Information

3.1 Packing Method



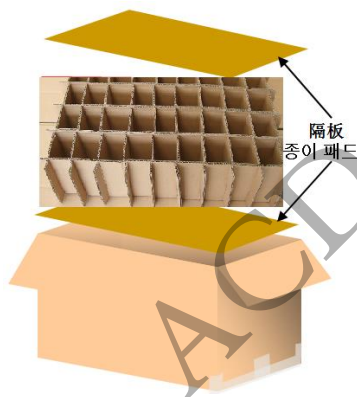
*Put in to ESD BAG

*1 band tied up 10 ESD BAG



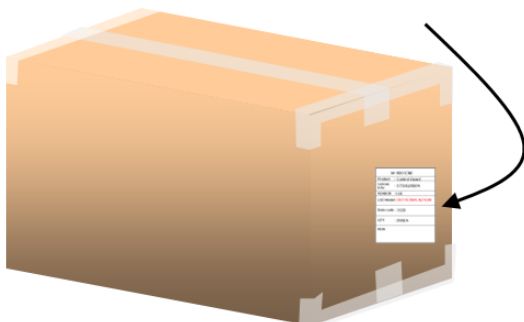
*Full control board on the partition

*Lay a layer (360pcs/box)



(put an empty tray at the top)

*Put the PAD at the Top of the box.



*Use tape to seal the box.

*Paste the label on the side of carton.

3.2 Packing Box Label

| | |
|------------------|------------------|
| SW4101DS-DY20-A | |
| Product : | Controller Board |
| Customer type : | SW4101DS-DY20-A |
| QTY : | |
| Change content : | |

3.3 Carton Photo



ACDC Confidential

This chapter describes the touch
controller ROHS

4

Touch Control Board ROHS

| 환경유해물질 성분분석표 环境有害物质 成分分析表 | | | | 업체명 供应商名 | | 전화번호 电话号码 | | | | | | |
|---|---------------------------|---------------------------|-----------------------|-----------------|--------------|--------------|----------------|----------------|-----------------|----------------------------------|--------------------------------|----------|
| | | | | 작성자 制作者 | Ouyang | E-mail | | | | | | |
| | | | | BUYER | 신용정보 | | | | | | | |
| 재질 분류 材质分类 | 품 명 品名 (Parts Name) | 料号 (Part NO.) | 제조사 供应商 (Maker) | 합유비율 함유比率 (PPM) | | | | | | 성적서 번호 SGS No (Report No.) | 성적서 작성일 SGS 报告日期 (Date.) | 비고 备注 |
| | | | | Cd (100) | Pb (1000) | Hg (1000) | Cr6+ (1000) | PBBs (1000) | PBDEs (1000) | | | |
| 均质 | 贴片电容 | 0402,0.1uF/104/25V,±10% | YAGEO | N.D | N.D | N.D | N.D | N.D | N.D | KA/2018/10340 | 2018/1/19 | |
| 均质 | 贴片电容 | 0603,4.7uF/475/10V,±10% | SANMSUNG | N.D | N.D | N.D | N.D | N.D | N.D | F690101/LF-CTSAYSS17-59370 | 2017/11/17 | |
| 均质 | 贴片电容 | 0402,1uF/105/10V,±10% | SANMSUNG | N.D | N.D | N.D | N.D | N.D | N.D | F690101/LF-CTSAYSS17-59371 | 2017/11/17 | |
| 均质 | 贴片电容 | 0402,22pF/220/50V,±5% | WALSIN | N.D | N.D | N.D | N.D | N.D | N.D | CE/2018/11523 | 2018/1/12 | |
| 均质 | 贴片电容 | 0402,150pF/151/50V,±10% | WALSIN | N.D | N.D | N.D | N.D | N.D | N.D | CE/2018/11523 | 2018/1/12 | |
| 均质 | TVS 管 | N05BT1006-H | Formosa | N.D | N.D | N.D | N.D | N.D | N.D | CE/2018/11404 | 2018/1/12 | |
| 均质 | 连接器 | 1.0T-1-5AW条形卧式贴片/5P,1.0mm | 杨睿电子 | | | | | | | Accessory | | |
| 均质 | 连接器 | 1.25MM 4pin 卧式 | 杨睿电子 | | | | | | | Accessory | | |
| 均质 | 连接器 | (下接, 翻盖)1.0,6P | 杨睿电子 | | | | | | | Accessory | | |
| 均质 | 连接器 | (下接, 翻盖)0.5,80P | 杨睿电子 | | | | | | | Accessory | | |
| 均质 | 贴片磁珠 | 1608KF-601T10 | TAI-TECH | N.D | N.D | N.D | N.D | N.D | N.D | CE/2017/C0633 | 2017/12/12 | |
| 均质 | 贴片电阻 | 0402,0Ω,±5% | WALSIN | N.D | N.D | N.D | N.D | N.D | N.D | CE/2017/86385A | 2017/9/5 | |
| 均质 | 贴片电阻 | 4.7K/472,±5% | WALSIN | N.D | N.D | N.D | N.D | N.D | N.D | CE/2017/86385A | 2017/9/5 | |
| 均质 | 贴片电阻 | 10K/103,±5% | WALSIN | N.D | N.D | N.D | N.D | N.D | N.D | CE/2017/86385A | 2017/9/5 | |
| 均质 | 贴片电阻 | 0402,100K/104,±5% | WALSIN | N.D | N.D | N.D | N.D | N.D | N.D | CE/2017/86385A | 2017/9/5 | |
| 均质 | 触控IC | SW4101D | SIW | | | | | | | Accessory | | |
| 均质 | LDO | RT9013-33GB | RICHTEK | | | | | | | Accessory | | |
| 均质 | 贴片晶振 | 2520/24MHZ/20PPM 20PF | JKX | N.D | N.D | N.D | N.D | N.D | N.D | CANEC1726381506 AO1 | 2018\1\10 | |
| 均质 | PCB | SW4101DS-DY20 | 欣磊欣 | | | | | | | Accessory | | |
| 당사에서 납품하는 상기 품목에 대하여 사용되는 유해 물질은 목록표와 같음을 증명 합니다. | | | | | | | | | | | | |
| A4 (297*210)mm | | | | | | | | | | | | |