

# PRODUCT SPECIFICATION

Customer :  
Model : T5R-12.1-FJLP  
Mode : Five-Wire Resistive touch Screen  
Lssue Date :

Checked		Prepared	
Customer Approval			

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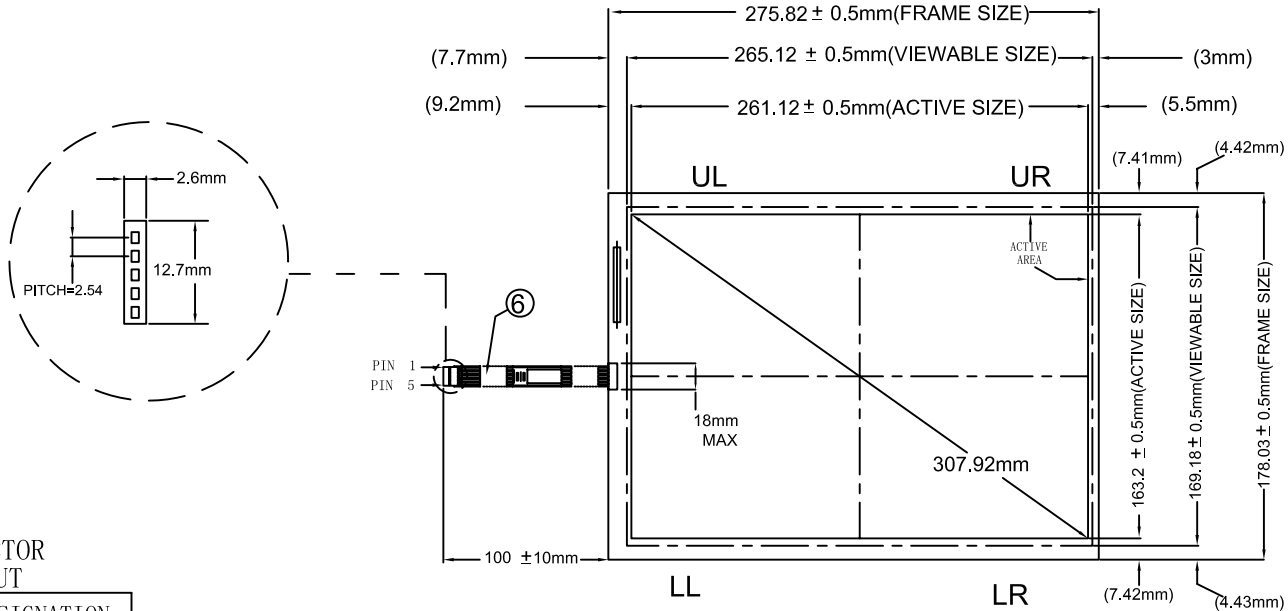
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**NOTES:**

1. ITO FILM TYPE: CLEAR FILM OR ANTI-GLARE FILM
2. GLASS THICKNESS TYPE: 1.1mm 1.8mm OR 2.8mm
3. FINISHED PART THICKNESS TYPE: 1.45mm 2.15mm OR 3.15mm
4. PANEL CABLE LENGHT TYPE: 100mm OR 180mm
5. CABLE IS ATTACHED TO THE LEFT SIDE OF TOUCHSCREEN AT CENTER POINT AS SHOWN
- ⑥. LABEL TO BE ATTACHED AT FRONT SIDE OF CABLE



**CONNECTOR PINOUT**

PIN NO.	DESIGNATION
1	UL
2	UR
3	Sense
4	LL
5	LR

<b>vtouch</b>	
VTOUCH P/N: T5R-12.1-FJLP	
DESCRIPTION 12.1" 5-Wire Resistive TouchScreen	
UNIT mm	
DATE 09/05/21	
SHEET 1 OF 1	

**01. Scope**

The specification is for Five-Wire Resistive touch Screen.

**02. Features [**

Item		Specifications
(1)	Type	Five-Wire Resistive
(2)	Input Mode	Stylus or Finger
(3)	Cable	Shielded Polyester Flat Flexible Cable Or Flexible Printed Circuit

**03. General Specification**

Item		Specifications
(1)	Frame Size	275.82 ± 0.5mm × 178.03 ± 0.5mm
(2)	Viewable Area	265.12 ± 0.5mm × 169.18 ± 0.5mm
(3)	Active Area	261.12 ± 0.5mm × 163.2 ± 0.5mm
(4)	Total Thickness	2.15 ± 0.2mm
(5)	Tail Length	100 ± 10mm

**04. Environmental Characteristics**

Item		Specifications	
		Temperature	Humidity (Non Condensing)
(1)	Operation	-20°C ~ +70°C	20%RH ~ 90%RH
(2)	Storage	-40°C ~ +80°C	10%RH ~ 90%RH

**05. Mechanical Characteristics**

Item		Specifications	Condition
Panel	Operating Force	Stylus=R0.8	20-120G
	Impact	25.0ΦDIA.Steel Ball/50g Height=70cm	One time,no damage Impact at center area
	Static Load	5kg within 6cm <sup>2</sup> area for 30 sec	Satisfy(1) of Item 5 and (1), (2),(4) of Item 6
	Hardness	3H pencil pressure 1N/45°	≥3H
FFC OR FPC	Peeling	800g by vertical 90°	Satisfy (1)of Item 6
	Bending	135°10 times left & right	Satisfy (1)of Item 6

**06. Electrical Characteristics**

Item		Specifications
(1)	Loop Resistance	X:20~500Ω, Y:20~500Ω
(2)	Linearity	X ≤ 1.5%, Y ≤ 1.5% (See Figure 10-2)
(3)	Chattering	≤ 5ms
(4)	Insulation	≥ 20MΩ/25V(DC)
(5)	Endurance	No acting damage at DC50V/60sec.

**07. Optical Characteristics**

**Fog film**

Item	Specifications
Transparency	82% ≤ Fog film ≤ 92% (clear type measured by BYK-Gardner at 550nm)

**Clear film**

Item	Specifications
Transparency	Clear film ≥ 92% (clear type measured by BYK-Gardner at 550nm)

**08.Reliability**

Item		Specifications	Condition
Panel	High Temperature /Humidity	70°C/80%RH, 120 hrs, allow panel stays in normal environment for 4 hrs	Reliability test may cause the film puffed yet the electric characteristic stays intact. (1), (4) of Item 6; (1), (2) of Item 7; (2) of item 6 satisfies
	High temperature	70°C /200 hrs allow panel stays in normal environment for 4 hrs	
	Low temperature	-30°C /200 hrs allow panel stays in normal environment for 4 hrs	
	Thermal Cycle	-40°C ~80°C [60 min./cycle] *100 cycles allow panel stays in normal environment for 4 hrs	

**09.Durability**

Item		Specifications	Condition
Panel	Knock Test	35,000,000 times	Satisfy (1), (4) of Item 6; (1), (2) of Item 7; (2) of item 6 satisfies X≤1.5%, Y≤1.5%



**10. Inspection Methods**

(1) Linearity

Step 1: Short UR and LR(or short LR and LL).

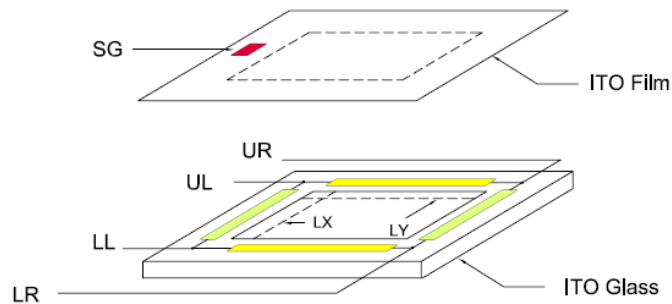
Step 2: apply voltage DC 5V.

Step 3: short UL and LL (or short UR and UL).

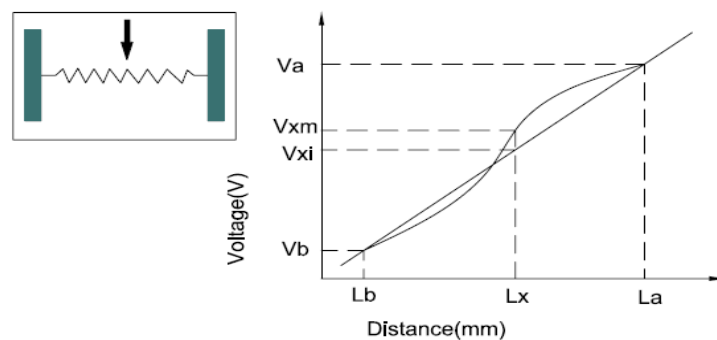
Step 4: apply grounding.

Step 5: draw points along Lx and Ly at 5.0mm intervals within pattern area and detect the voltage at SG

Step 6: measure the voltage differences between UR and UL(or UR and LR) (Fig 10-1) (Fig 10-2)



**Figure 10-1**



**Figure 10-2**

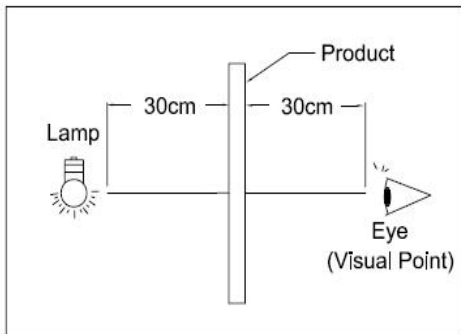
※ Linearity:  $[ | V_{xm} - V_{xi} | ] / (V_a - V_b) \times 100\%$

(2) Specification

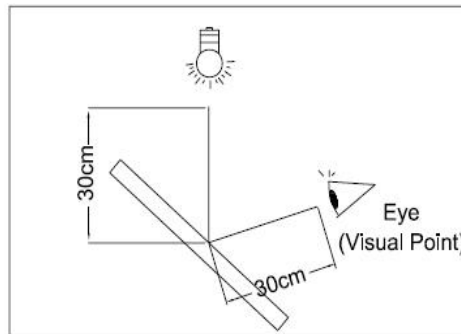
Linearity must meet the electrical characteristic specified in Item 6.

**11. Appearance Inspection**

- (1) A 17W fluorescent luminant lamp is used for appearance inspection. Detail settings are shown in Figures 11-1 and 11-2.
- (2) Minor impurities outside viewing area are acceptable unless their existence affect electrical functions.



**Figure11-1**



**Figure11-2**

- (3) Glass Flaw

Item	Picture	Specification
Corner Flaw	<p>A 3D perspective diagram of a rectangular glass piece with a corner flaw. The flaw is a rectangular indentation at the corner. Dimensions X and Y are shown along the top edges of the flaw, and Z is shown as the depth of the flaw. T represents the thickness of the glass.</p>	$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
Edge Flaw	<p>A 3D perspective diagram of a rectangular glass piece with an edge flaw. The flaw is a rectangular indentation along one of the edges. Dimensions X and Y are shown along the top edges of the flaw, and Z is shown as the depth of the flaw. T represents the thickness of the glass.</p>	$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
Progressive Flaw	<p>A 3D perspective diagram of a rectangular glass piece with a progressive flaw. The flaw is a long, narrow, and irregular indentation along one of the edges.</p>	Not allowed

Note: T=Glass thickness

**12. Attention for Mounting**

(1) The gasket support of touch panel must allocate outside of Viewable Area. Reserve enough clearance between panel surface and enclosure for normal panel operation.

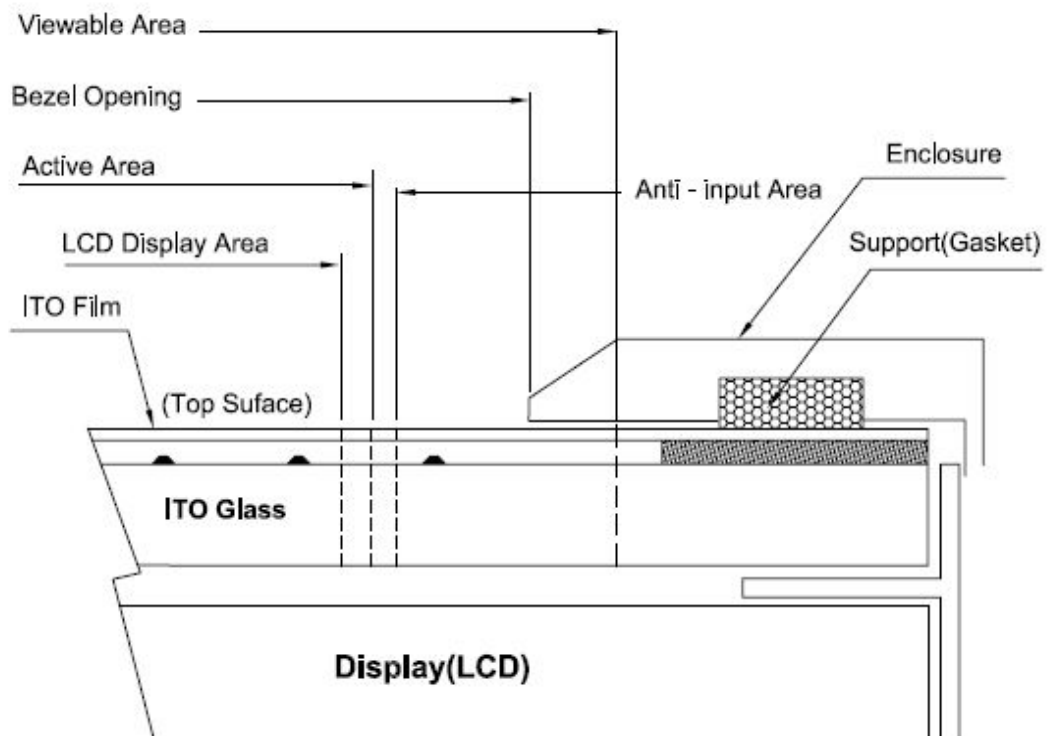
To avoid pressing error, please retain enough space between panel and Bezel.

(2) Bezel opening must not touch Viewable Area, Bezel opening must be designed between Viewable Area and Active Area

(3) We recommend elastic material support.

(4) Due to the conductive characteristic of the panel backside, prevent metal contact after mounting.

(5) Proper grounding of controller at all times assure normal operation.



**Figure12-1**

**13. Warranty**

Vtouch comes with a 3-year warranty on all Five-Wire Analog products.

Warranty does not cover the following situations:

1. Damages caused by improper handling from clients, including shipping, installation and integration.
2. Damages caused by either natural or human factors after receiving the products.
3. Damage caused by self-repairs, modifications or disassembling of the product.

**14. Caution**

Storage	Store panel under the temperature and humidity range pre-specified. Direct sunlight exposure or piling should be avoided.
Unpack	Unpack the box with the direction pointing up.
Handing	<p>(1) Use clean sacks or glove to prevent fingerprints and/or stains left on the panel. Extra attention and carefulness should be taken while handling the glass edge.</p> <p>(2) Avoid touching the viewing area before installation/integration.</p> <p>(3) Holding the panel instead of the tail (connector) at all time.</p>

<p>Cleaning</p>	<p>Use neutral detergent or isopropyl alcohol on a clean soft cloth to clean the panel surface.</p> <p>(1) Prevent using any kind of chemical solvent, acidic or alkali solution.</p>
<p>Installing and Assembling</p>	<p>(1) Excessive force or strain to the panel or tail is prohibited.</p> <p>(2) Retain at least 0.3 mm clearance between panel and display module.</p> <p>(3) Gasket or cushion pads around the edge of the panel may segregate water and/or dust contamination.</p>
<p>Operating</p>	<p>(1) Touch the panel with your finger or Touch pen only to assure normal operation. Any sharp edged or hard objects are prohibited.</p> <p>(2) Operate the panel in a steady environment. Abrupt variation on temperature and humidity may cause malfunction of the panel.</p>
<p>Others</p>	<p>(1) Keep the panel surface clean. Prevent any kind of adhesive applied on the surface.</p> <p>(2) Avoid high voltage and/or static charge.</p> <p>(3) Vtouch has the right to change the materials and/or specifications.</p>