創為精密材料股份有限公司
Apex Material Technology Corp.

TOUCH PANEL SPECIFICATION

Doc No	AS-92-P3024-C20-1	Doc Rev：1.0
Product	Part Number：92-P3024-C20 Size：10.39”	Date Released：Sep.30 , 2014
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Revision Record

Item	Date	Version	Description
1	2014/9/30	01	Initial Release

Remarks:

Projective Capacitive Touch Panel Specification

Manufacturer: Apex Material Technology Corp.

1.0 Mechanical Dimensions and Construction

1.1 General: Projective capacitive touch panel is designed by Cover Lens-Film-Film construction

1.2 Mechanical Performance:

1.2.1 Surface Hardness: Mohs 5

1.2.2 Cover Lens Thickness: 1.1mm (Glass)

1.2.3 Overall Thickness: 1.50±0.20mm

1.2.4 Static Force Requires Breaking the Glass: >20kgf

1.2.5 Controller and Tail Type: COF(chip on FPC tail)

1.2.5.1 Controller is P2-06 IC on the FPC tail, the COF is named PM 2300

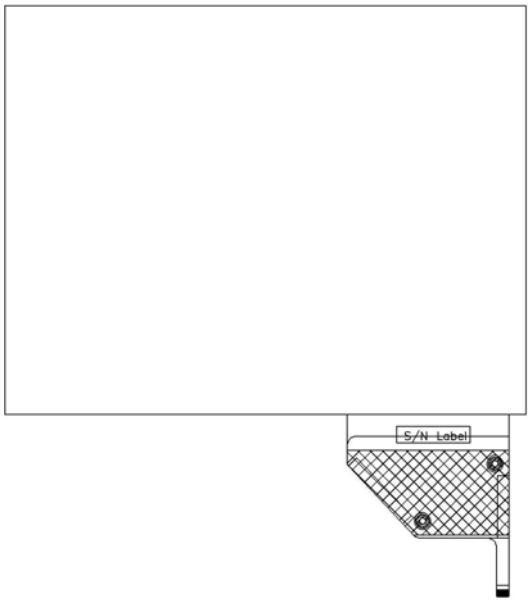
1.2.5.2 FPC Tail Bending Radius: R2.5mm

1.2.5.3 Holding force for tail, peeling upward 90deg with 500gw without impact to electric performance.

1.2.5.4 Connector Pins & Pitch : 10 pins, pitch is 0.5mm

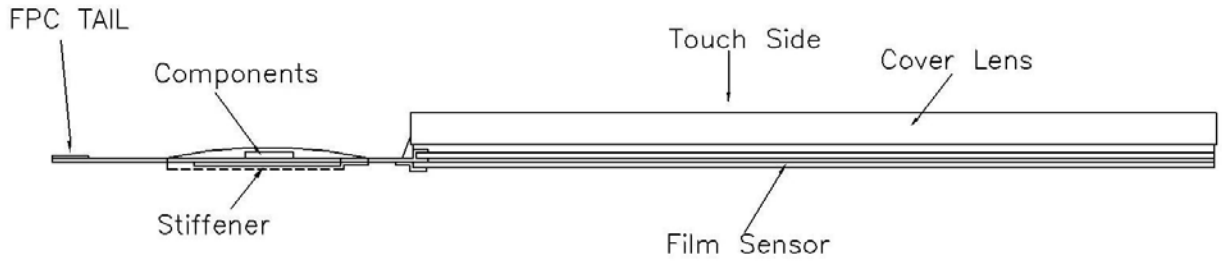
1.2.6 Top Surface Finish Type: Clear

Touch Panel Front View:

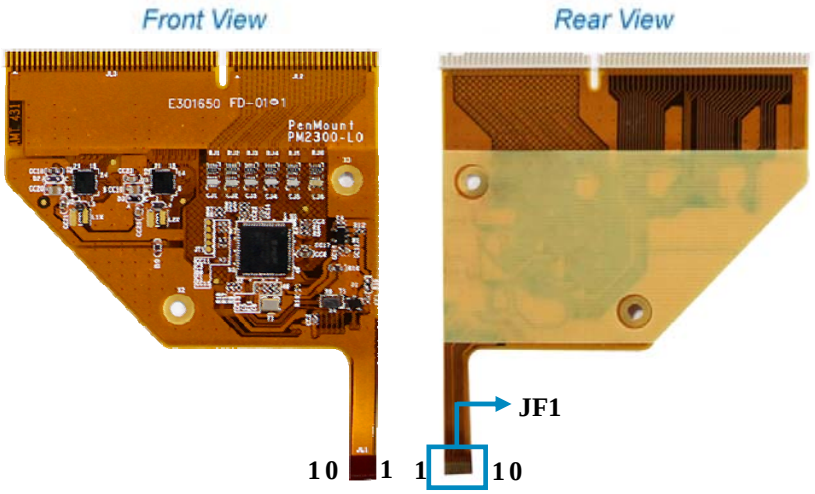


Remark: Components located in front side

Touch Panel Side View:



COF Tail Rear/ Front View:



JF1 Definition	
Pin	**Designation**
1	5V/3.3V
2	D-
3	D+
4	GND
5	SCL/RXD
6	SDA/TXD
7	RESET
8	DETECT
9	INTHM
10	NC

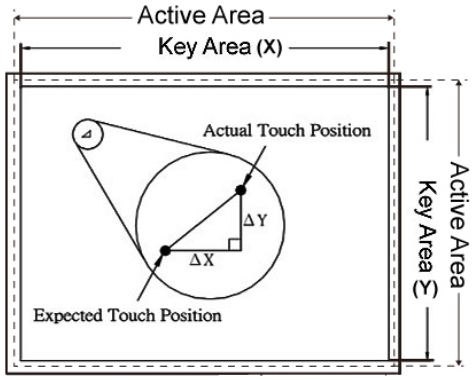
2.0 Typical Optical Characteristics

2.1 Visible Light Transmission: 90±3%

2.2 Haze: 7±3%

3.0 Electrical Specifications

3.1 Positional Accuracy: The accuracy specifications are based on PenMount touch panel controllers and drivers to define, the percentage of positional inaccuracy is less than 1.5% as defined below.



X direction of linearity: Δx/X *100%.

Y direction of linearity: Δy/Y *100%.

3.2 Operating Voltage: 5V or 3.3V

3.3 Measurement Resolution: 2048 based on PM2300 series controller

3.4 Activation Force: Zero force

3.5 The COF Tail Interface: USB 2.0 or 3.0, I^2C, UART

3.6 Power Consumption: Typical – Standby Mode: 24.7 mA / 5V;
Active Mode: 45.8 mA / 5V;
Sleep Mode: 2.5 mA / 5V;

3.7 Sample Rate: Single Point 100 sps / Two Point 80 sps
(Sample-rate is may be effected by different firmware)

4.0 Environmental Specifications

4.1 Operating Temperature: -25℃ ~ +70℃

4.2 Storage Temperature: -40℃ ~ +80℃

4.3 Humidity: limits to be at 90% RH at max 40℃; no dew condensation.

5.0 Reliability Test

5.1 Exposure to High Temperature

Touch panel is put into a test machine at the condition of 80° C for 288 hours. Then it is left at room temperature for 24 hours or more, all the electrical specifications as list in the above item 3.0 will be remained same.

5.2 Exposure to Low Temperature

Touch panel is put into a test machine at the condition of -40° C for 288 hours. Then it is left at room temperature for 24 hours or more, all the electrical specifications as list in the above item 3.0 will be remained same.

5.3 Exposure to Constant Temperature and Humidity

Touch panel is put into a test machine at the condition of 60° C, 90%RH for 288 hours. Then it is left at room temperature for 24 hours or more, all the electrical specifications as list in the above item 3.0 will be remained same.

Remark:

Well protect the COF circuitry area, do not let moisture be in the COF components, otherwise, malfunction or defect will be caused.

5.4 Thermal Shock

Touch panel is put into a test machine at the condition of -40° C for 30 minutes, and then 80° C for 30 minutes. The process is repeated by 20 cycles. Then it is left at room temperature for 24 hours or more, all the electrical specifications as list in the above item 3.0 will be remained same.

5.5 Vibration Test

5.5.1 Vibration under Operation: Set frequency at 10~58Hz with 0.075mm amplitude and frequency at 58~500Hz with 1g amplitude; Test 10 cycles, test axis is +X, +Y, +Z axis; 1 octave / min.

5.5.2 Vibration under Storage: Set frequency at 5~9Hz with 3.5mm amplitude and frequency at 9~500Hz with 1g amplitude; Test 10 cycles, test axis is +X, +Y, +Z axis; 1 octave / min.

5.6 Shock Test

5.6.1 Shock under Operation: The condition is set at 15g acceleration, half sine by 11ms shock. Test 3 cycles, test axis is +X, -X, +Y, -Y, +Z, -Z axis.

5.6.2 Shock under Storage: The condition is set at 25g acceleration, half sine by 6ms shock. Test 1000 cycles, test axis is +X, -X, +Y, -Y, +Z, -Z axis.

6.0 Surface Chemical Resistance

6.1 Refer to AMT surface chemical resistance test method ASTD-001.

7.0 Optical Performance

7.1 Optical inspection method and optical defect standards refer to AMT document A003-1 updated version； 〝Touch Screen Optical Quality Standard.〞

7.2 Outside to Viewing Area: any optical defects in this area should be ignored if no touch panel function is affected.

8.0 Others

8.1 Always store the touch panel in its original shipping container under normal conditions (Temperature 20~25° C; Humidity ≦65%RH).

8.2 For ESD protection recommendations please refer to the AMT touch screen integration guides.

8.3 Remove the power supply of the touch controller before touching it, always hold the touch controller by the edge, avoid touching the components on the touch controller or COF tail on the sensor.

8.4 Use a grounded wrist strap or touch a safely grounded object before handling the touch controller or COF tail on the sensor to avoid damaging them due to static electricity.

8.5 For COF PCI products, the IC and component areas should be well protected; moisture in these areas can cause malfunction or errors of the touch functionality.

8.6 This Model is RoHS compliant.