Customer:

Customer Material No:

Product No : P T H 0 0 3

Product Name :PTH003 (FOR PA320320A 1.63Inch)

Project Capacitive Touch Panel Module

Customer	Signature

Approved by	Reviewed by

Revision History

Date	Rev	Page	Item	Old	New	Reason
						Preliminary specification first issued

CONTENTS

1. SCOPE

The purpose of this specification is to define the general provisions and quality requirements that apply to the supply of capacitive-type multi-touch function TOUCH SENSOR MODULE manufactured by P I T E K , is the highest-level specification for this product. It describes the product, identifies supporting documents and contains specifications.

2. WARRANTY

.PITEK Co., ltd. warrants that the product delivered pursuant to this specification (or order) will conform to the agreed specifications for twelve (12) months from the shipping date (“Warranty Period”). P I T E K Co., Ltd. is obligated to repair or replace the products which are found to be defective or inconsistent with the specifications during the Warranty Period without charge, on condition that the products are stored or used as the conditions specified in the specifications. Nevertheless, P I T E K Co., Ltd. Is not obligated to repair or replace the products without charge if the defects or inconsistency are cause by the force majeure or the reckless behaviors of the customer. After the Warranty Period, all repairs or replacement of products are subject to charge.

3. MECHANICAL DATA SPECIFICATIONS

NO.	Item	Specification	Remark
1	Lens color	Black	Refer to limited sample
2	Lens figure	Asahi Glass	2.5D
3	Lens coating	NA	
4	Outline Dimension	44.07mm×35.92mm	±0.05mm
5	Cover lens View Area	29.88mm×29.88mm	±0.10mm
6	OLED Active Area	29.28mm×29.28mm	
7	Total thickness (OLED+TP)	2.375mm	±0.10mm
8	Lens Thickness（including Ink printing）	1.30mm	±0.1mm
9	Lens strength	Glass rigidity>6H	
10	Proximity sensor hole	NA	
11	Logo	NA	
12	Touch key	NA	
13	Anti-Finger	NA	
14	AR	NA	

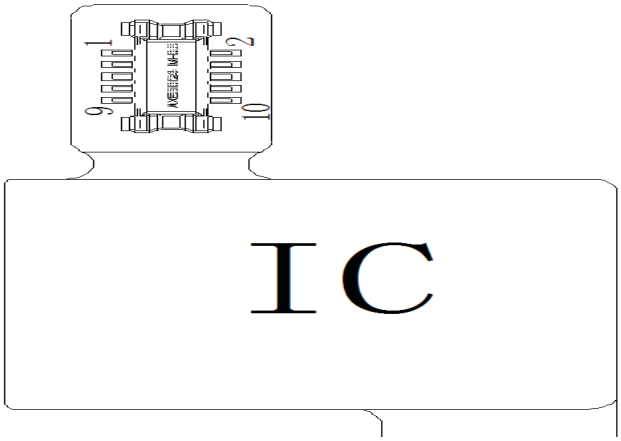
4.TP Sensor/FPC Specifications

NO.	Item	Specification	Remark
1	Structure	G+F	
2	IC solution	ITE IT7258	
3	Pitch(A)	4mm <A<7.5mm	Be suitable for TX and RX
5	Rx channel resistance	<150 ohm	
6	Tx channel resistance	<150 ohm	
8	FPC Spec	Ref to MD drawing	
9	Trace type /Process	Sliver trace	
10	Sensor outline	44.07mm×35.92mm	±0.05mm
11	Screen Sensor AA	29.88mm×29.88mm	±0.1mm
12	Bridge type	NA	Dito -type
13	Independence Icon （Yes/No/NA）	**NA**	
14	Icon Sensor AA	NA	
15	Lens&SensorAssembly tolerance	NA	
16	Total Thickness	0.95mm	±0.1mm
17	Sensor thickness	NA	
18	Average Sensor sheet resistance	150ohm±25ohm/□	For reference
		Uniformity>85%(9 points)	For reference
19	Other details	Ref to ID/MD drawing	

5.Basic specifications

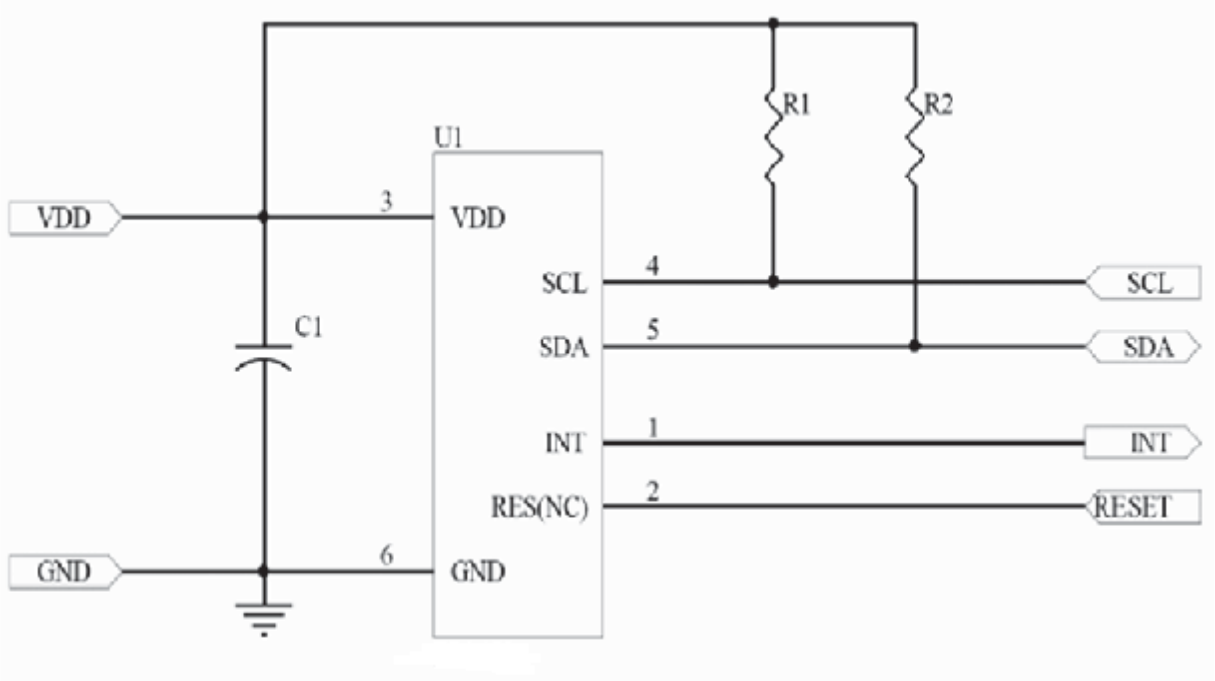
No.	Item	Specification	Description	Remark
1	Communication Protocol to Host	I2C	Standard-Mode : 100KHZ Fast-Mode: 400KHZ	
2	I2C Address	TBD		
3	Touch Origination Dot	TBD		
4	Finger	One layer 2 point		
6	Touch Resolution	320*320		
7	Report Rate	80HZ	LCD Frame 60Hz	
9	Point Sensitivity	≤Φ7mm	Report Percent=100 % (Both center area and edge area)	

6.PIN ASSIGNMENTS



PIN NAME	PIN NO	DESCRIPTION
GND	1	Ground. Connect to circuit ground.
SCL	2	I^2C Clock Signal
SDA	3	I^2C Data Signal
GND	4	Ground. Connect to circuit ground.
INT	5	This is interrupt pin for interrupt request.
DVDD	6	Power Source
AVDD	7	Power Source
TE(NC)	8	NC
RST	9	Active high external reset with internal pull down.
GND	10	Ground. Connect to circuit ground.

7. APPLICATION CIRCUIT



Recommend components:

C1 : 1uF/10V(0603)

R1 , R2 : 4.7K ohm(0603)

Note : For I^2C R1, R2 value should be fine tune by customer host.

8. RELIABILITY TEST CONDITIONS

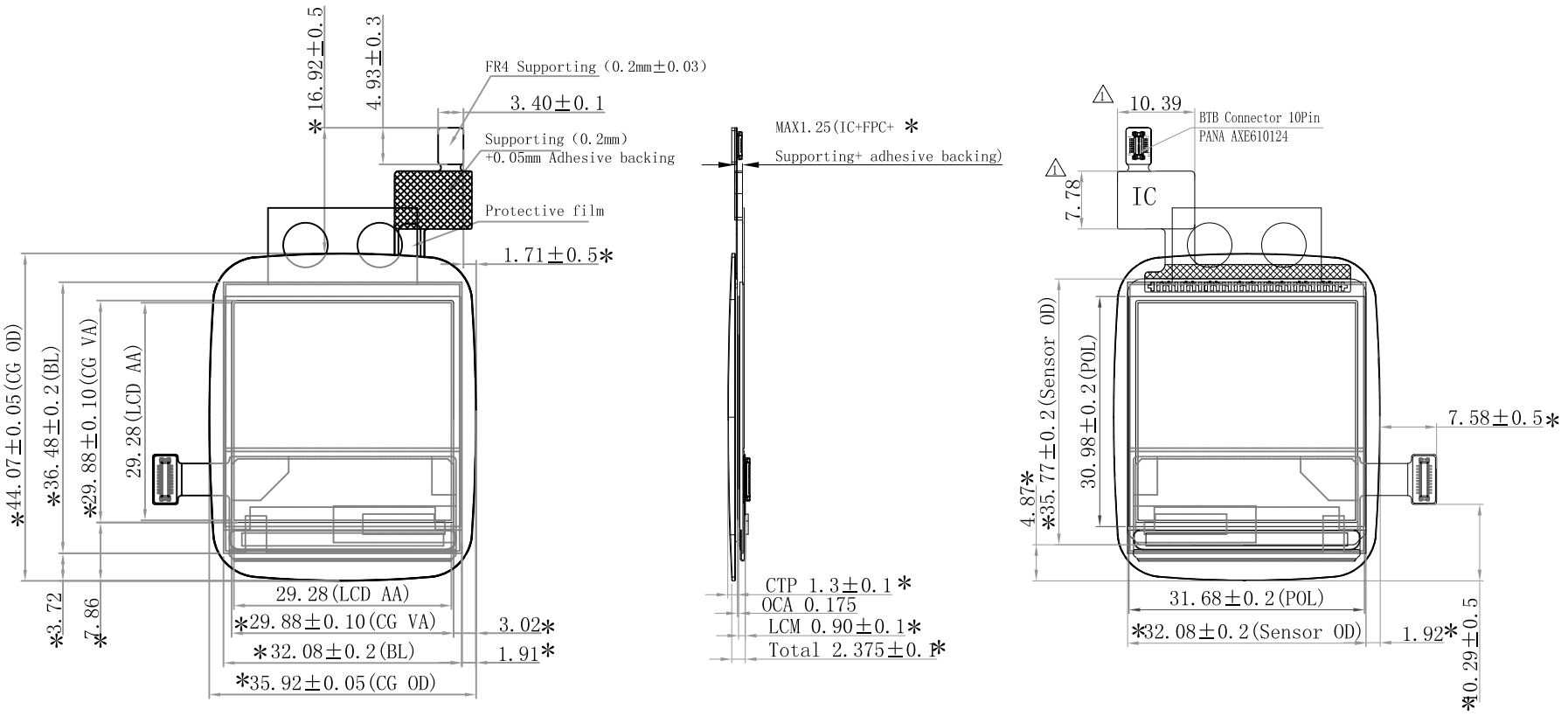
NO.	Items	Specification	Quantity
1	High temp. / High humidity (Non-operation)	60℃, 90%RH, 72hrs	5
2	High temp (Non-operation)	70℃, 72hrs	5
3	Low temp (Non-operation)	-20℃,72hrs	5
4	Thermal shock (Non-operation)	-30℃~80℃ (-30℃ /30min; transit 30min; 85℃ /30min; transit 30min) 1cycle :60min, 50 cycles	5
5	Ball Drop (Laminated Assembly)	Ball diameter =20mm(64g) Height : 45cm, time:1	5

Test and measurement conditions

All measurement shall not be started until the specimens attain to temperature stability.

Evaluation criteria

1. The function test is OK.
2. No observable defects.
3. No panel distortions or loss visual clarity.
4. No delaminations between cover lens and touch panel.
5. Average transmittance, color (La*b*) and haze : with ±10% of initial value.



TOP

CTP (1.3mm)
OCA (175um)
LCM (0.9mm)

MATERIAL CHARACTERISTICS

Property	Requirement
IC	ITE IT7258
CTP thickness	1.3mm
OCA thickness	0.175mm
Surface Hardness	6H
Light transmission	86%MIN
Operating temperature	-40~80°
Storage temperature	-40~80°
Operating Humidty	45~85 RH
Storage Humidity	5~95 RH

NO.	Pin Name
1	GND
2	SCL
3	SDA
4	GND
5	INT
6	DVDD
7	AVDD
8	TE(NC)
9	/RST
10	GND

PI TEK Technology Inc.					Drawing Number		Rev.
							A
Projection Type	Tolerance				MODEL		
	Dimension	±0.3			PTH003#2.5D		
	Unit	mm			TITLE		
	Drawn	Checked	Approved	PM	OLED Module		
By	Eco-2048	Eco-1500	Eco-0150	Eco-0097	Scale	Sheet	Size
Note	2048.00	1500.00	0150.00	0097.00	3/2	1 of 1	A4

10. PACKING SPECIFICATION(Please contact sales)

11. OUTGOING INSPECTIN PROVISION

I. SAMPLING METHOD

(1) ANSI-ASQ-Z1.4 (MIL-STD-105E)/inspection level Ⅱ/normal inspection / single sample inspection

(2) AQL: Major 0.65; minor 1.0

II. INSPECTION CONDITION

Cosmetic inspection at DongGuan JinFu-DG Electronic Co., Ltd. and or Customer shall use the TIME and DISTANCE method of inspection as described in this document for various defects type and allowable sizes.

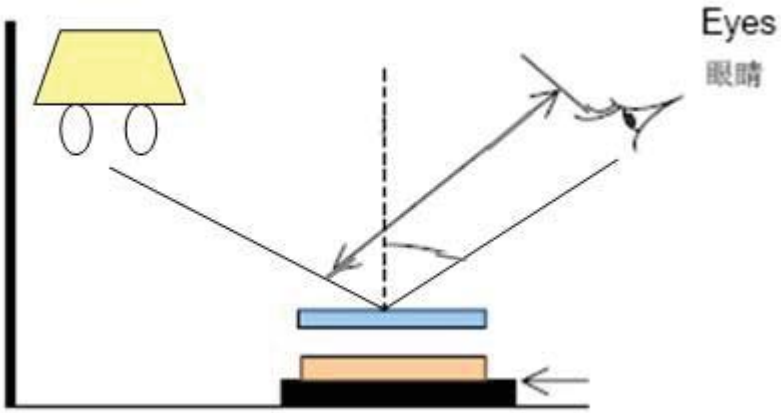
Time: Inspection per surface should exceed 10 secs.

Distance: ≧30cm

A. The inspection and measurement are performed under the following conditions, unless otherwise specified.
   1. Temperature : 22 ± 2℃
   2. Humidity : 50 ± 10%R.H
   3. Distance between the panel and eyes of the inspector ≧30cm
   4. Light Source : 800 ~ 1200 Lux
   5. Vertical rotation angle will be 45 ~ 90 and Horizontal rotation angle will be ±300.

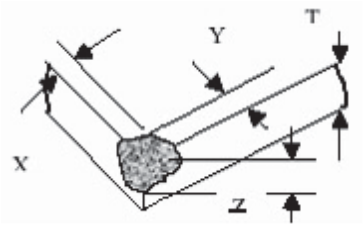
B. Detail settings are shown in below figure.

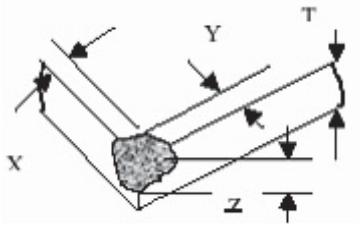
C. Minor impurities outside viewing area acceptable unless their existence affect electrical functions.



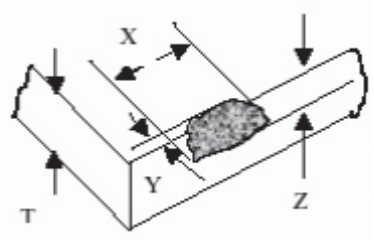
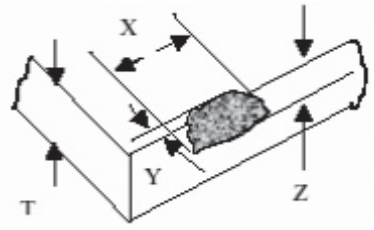
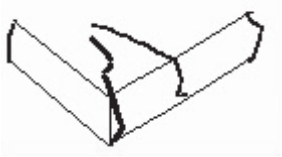
III. SPECIFICATION FOR QUALITY CHECK

<table>
<tr><th>Item</th><th>Criterion</th><th>AQL</th></tr>
<tr><td>1. Dot type defect (Blemish /Dent / Foreign Matter/ Pin hole / Bubble)</td><td>
<table>
<tr><td>Size (mm)</td><td>Number of piece permitted</td></tr>
<tr><td>Φ ≦0.2</td><td>Ignore</td></tr>
<tr><td>0.2＜ Φ ≦0.4</td><td>4</td></tr>
<tr><td>0.4＜ Φ</td><td>None</td></tr>
<tr><td>Beyond AA</td><td>Ignore</td></tr>
</table>
*Φ=(L+W)/2
**Twp dots interval distance above 10mm is permitted</td><td>Minor</td></tr>
<tr><td>2. Scratch</td><td>
<table>
<tr><td>Width (mm)
W</td><td>Length (mm)
L</td><td>Number of pieces permitted</td></tr>
<tr><td>W≦0.03</td><td>Ignore</td><td>Ignore</td></tr>
<tr><td>0.05＜W≦ 0.2</td><td>L≦5</td><td>4</td></tr>
<tr><td>0.2<W</td><td>__</td><td>None</td></tr>
<tr><td>Beyond A.A</td><td>__</td><td>Ignore</td></tr>
</table>
</td><td>Minor</td></tr>
</table>

<table>
<tr>
<td>3. Linear foreign object</td>
<td>
<table>
<tr><th>Width (mm)
W</th><th>Length (mm)
L</th><th>Number of pieces permitted</th></tr>
<tr><td>W≦0.05</td><td>Ignore</td><td>Ignore</td></tr>
<tr><td>0.03＜W≦0.1</td><td>L≦5</td><td>4</td></tr>
<tr><td>0.1<W</td><td>—</td><td>None</td></tr>
<tr><td>Beyond A.A</td><td>—</td><td>Ignore</td></tr>
</table>
</td>
<td>Minor</td>
</tr>
<tr>
<td>4.Water stain</td>
<td>Water stain is not acceptable</td>
<td>Minor</td>
</tr>
<tr>
<td>5. Corner fragment</td>
<td>For sensor glass:
 

1. X≦1.0mm, Y≦1.0mm, Z<t
2. Corner fragment extending into the lead wire is not acceptable
For cover lens:
 

X≦0.2mm, Y≦0.2mm, Z<t</td>
<td>Minor</td>
</tr>
<tr>
<td>6.Side fragment (Edge fragment)</td>
<td>For sensor glass:</td>
<td>Minor</td>
</tr>
</table>

	 1.X≦3.0mm, Y≦1.0mm, Z<t 2.Side fragment extending into the lead wire is not acceptable. For Cover lens: 	
Item	X≦0.2mm, Y≦0.2mm, Z<1/2t Criterion	AQL
7. Corner and side crack	 Corner crack extending into the side crack is not acceptable.	Minor
8.Lamination adhesive	Shrinking into the sensor glass over 0.3mm is not acceptable Overflowing out of the sensor glass over 0.5mm is not acceptable.	Minor
9. Mura	Refer to the limit samples. Minor.	Minor