



**奇畿科技股份有限公司**  
**Miracletouch Technology Inc.**

## **PRODUCT SPECIFICATIONS**

**CUSTOMER :**

**MODEL : 20156004**

**VERSION : V01**

**DATE : 2014/09/15**

CUSTOMER SIGNATURE	APPROVED
	<b>PREPARED BY</b>

Record of revisions

item	date	version	page	summary
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Remark:				

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## 1. General

- 1.1 This document is included the specifications of touch screen.
- 1.2 This touch screen is projected capacitive type.
- 1.3 It is designed to be activated by pressure of finger.

## 2. Environmental Specifications

### 2.1 Storing Environment

Temperature Range : - 40°C ~ 80°C

Humidity Range : 20% RH ~ 90% RH (Non Condensing)

### 2.2 Operating Environment

Temperature Range : -10°C ~ 70°C

Humidity Range : 20% RH ~ 80% RH (Non Condensing)

- 2.3 The above environment is under normal pressure of the atmosphere.

## 3. Mechanical Specifications

### 3.1 Touch panel style

style : Projective Capacitive

### 3.2 Dimension Specifications:

Dimension outline	384.50 x 233.70 mm ± 0.30mm
Sensor size	363.70 x 214.00 mm ± 0.30mm
Active area	347.50 x 196.70 mm ± 0.20mm
Viewable area	344.50 x 193.70 mm ± 0.20mm
Total thickness	2.45 mm ± 0.20mm
Tail length	88.00 mm ± 3.00mm

- 3.3 Operating Force  $\leq$  10g (Finger)

- 3.4 Surface Hardness  $\geq$  7H (ASTM D3363, pressure 750g/45°)

- 3.5 Static Load : 3 kg within 10cm<sup>2</sup> area for 30sec

- 3.6 Impact : Impact at center area one time , no damage (25.0ψDIA. Steel Ball/67g , Height=50cm)

- 3.7 Bending : 90° 10 times left & right

3.8 Peeling : 800g by vertical 90°

## 4. Optical Specifications

4.1 Transparency :  $90 \pm 3\%$  (BYK Gardner , 550nm , ASTM D1003)

4.2 Haze :  $< 4\%$  (BYK Gardner , ASTM D1003)

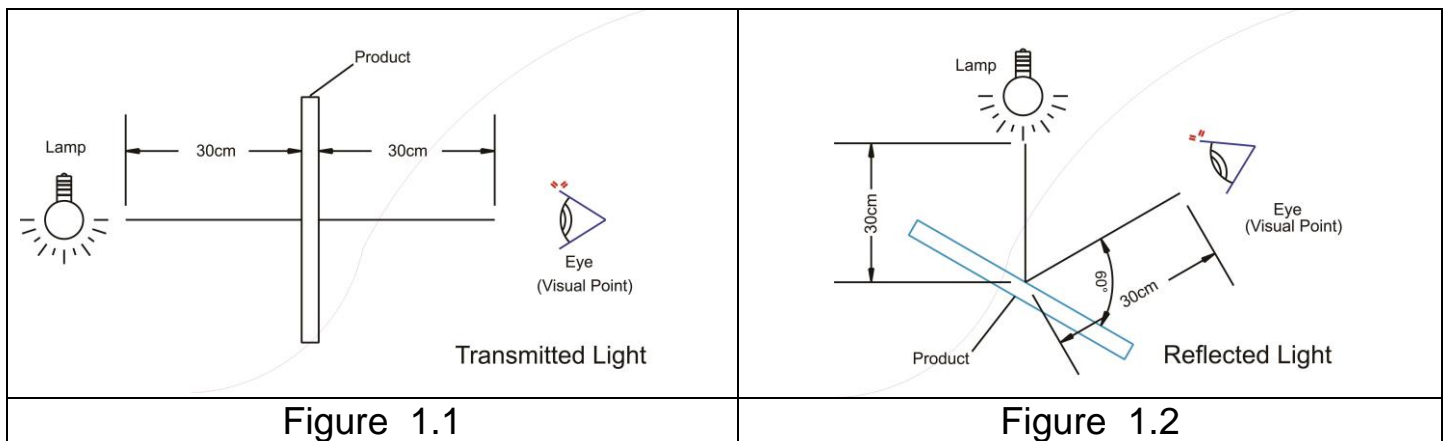
## 5. Electrical Specifications

5.1 Response : According to integration time of controller

5.2 Insulation resistance  $\geq 50\text{M}\Omega/25\text{V DC}$

## 6. Appearance Inspection

6.1 The inspection shall be performed by using one 17w fluorescent lamp as back or side light . The panel shall be placed at 30cm away from eyes.  
(Figure1.1 and Figure1.2 ).



6.2 The flaws and Impurities are allowed outside viewing area except those affecting electrical functions.

Inside the viewing area , it meets the following :

(1) Linerar Object :

$W \leq 0.15 \text{ mm}$  OK

$0.15 \text{ mm} < W \leq 0.25 \text{ mm}$  and  $L \leq 25$ , total  $\leq 5$  OK

$W > 0.25 \text{ mm}$  No good

( W : width of flaws , L : length of flaws )

(2) Dot-shaped Impurities :

$D \leq 0.7 \text{ mm}$  OK

$0.7 \text{ mm} < D \leq 0.8 \text{ mm}$ , total  $\leq 5$  OK

$D > 0.8 \text{ mm}$  No good

(  $D$  : average of diameter , Each area contains=20  $\phi$  )

(3) Scratch :

$W \leq 0.1$  OK

$0.1 \text{ mm} < W \leq 0.2 \text{ mm}$  and  $L \leq 25 \text{ mm}$  , total  $\leq 6$  OK

$W > 0.2 \text{ mm}$  , No good

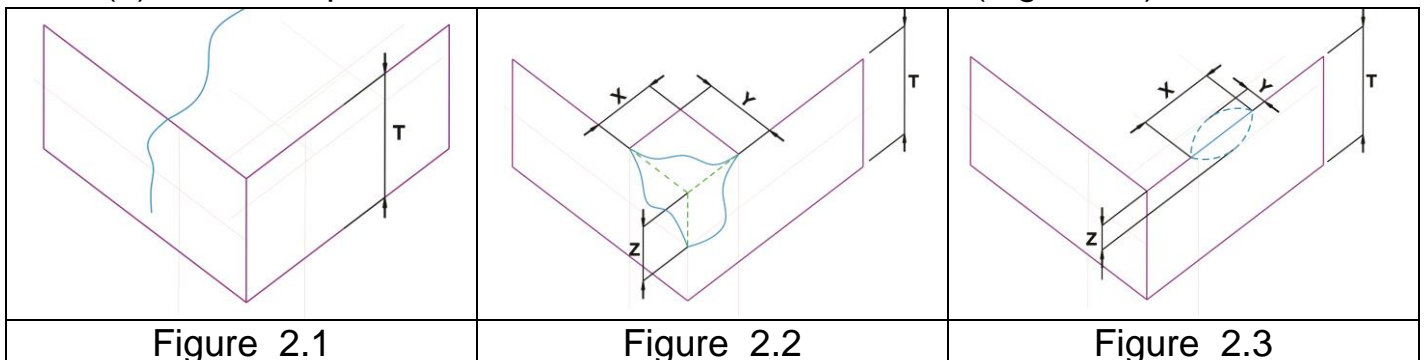
(  $W$  : width of scratch ,  $L$  : length of scratch )

Glass Flaw

(1) Progressive Flaw : No good (Figure2.1)

(2) corner chips :  $X \leq 3 \text{ mm}$  ,  $Y \leq 3 \text{ mm}$  ,  $Z \leq T$  (Figure2.2)

(3) border chips :  $X \leq 10 \text{ mm}$  ,  $Y \leq 3 \text{ mm}$  ,  $Z \leq T$  (Figure2.3)



$X$  : Width direction against the edge line.

$Y$  : Length direction against the edge line.

$Z$  : Thickness direction against the edge line.

The chips are not supposed to affect any of the electrical functions.

## 7. Durability

Knock test : 100,000,000 times keystrokes

They still meet the specification required in section 5.1 and 5.2

## 8. Reliability

8.1 High temperature test

After putting panels at  $70^{\circ}\text{C}$  for 240 hours and allow panels stay in normal

environment for 4 hours , they still meet the specification required in section 5.1 and 5.2

#### 8.2 Low temperature test

After putting panels at  $-40^{\circ}\text{C}$  for 240 hours and allow panels stay in normal environment for 4 hours , they still meet the specification required in section 5.1 and 5.2

#### 8.3 High temperature and high humidity test

After putting panels at  $70^{\circ}\text{C}$  , 90% RH for 240 hours and allow panels stay in normal environment for 4 hours , they still meet the specification required in section 5.1 and 5.2

#### 8.4 Thermal shock test

1 Cycle :  $-40^{\circ}\text{C} \rightarrow 70^{\circ}\text{C}$  ( 60 minutes period )

After putting panels for 50 cycles and allow panels stay in normal environment for 4 hours, they still meet the specification required in section 5.1 and 5.2

## 9. Warranty

Miracletouch provides two years warranty of Miracletouch products.  
The followings are not covered in the warranty:

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

## 10.Cautions

10.1 Excessive force or strain to the panel or tail is prohibited.

10.2 Retain at least 3.0mm clearance between panel and display module.

10.3 Maintain a minimal 5R when bending tail to prevent dead fold or fold mark.

10.4 Flaws in customer module design may cause functionality issues after assembly

10.5 Avoid applying excessive activation force or sudden impact on the panel surface.

10.6 If there exist any high voltage power , please make an adequate

protect.

10.7 To avoid the high voltage static power to damage panel , please don't operate touch panel without connecting controller.

10.8 The panel could be cleaned with cloth containing ethanol or neutral cleaner. It is no effects to the characteristics

10.9 Miracletouch retain the right of changing the materials with same grade and specification.

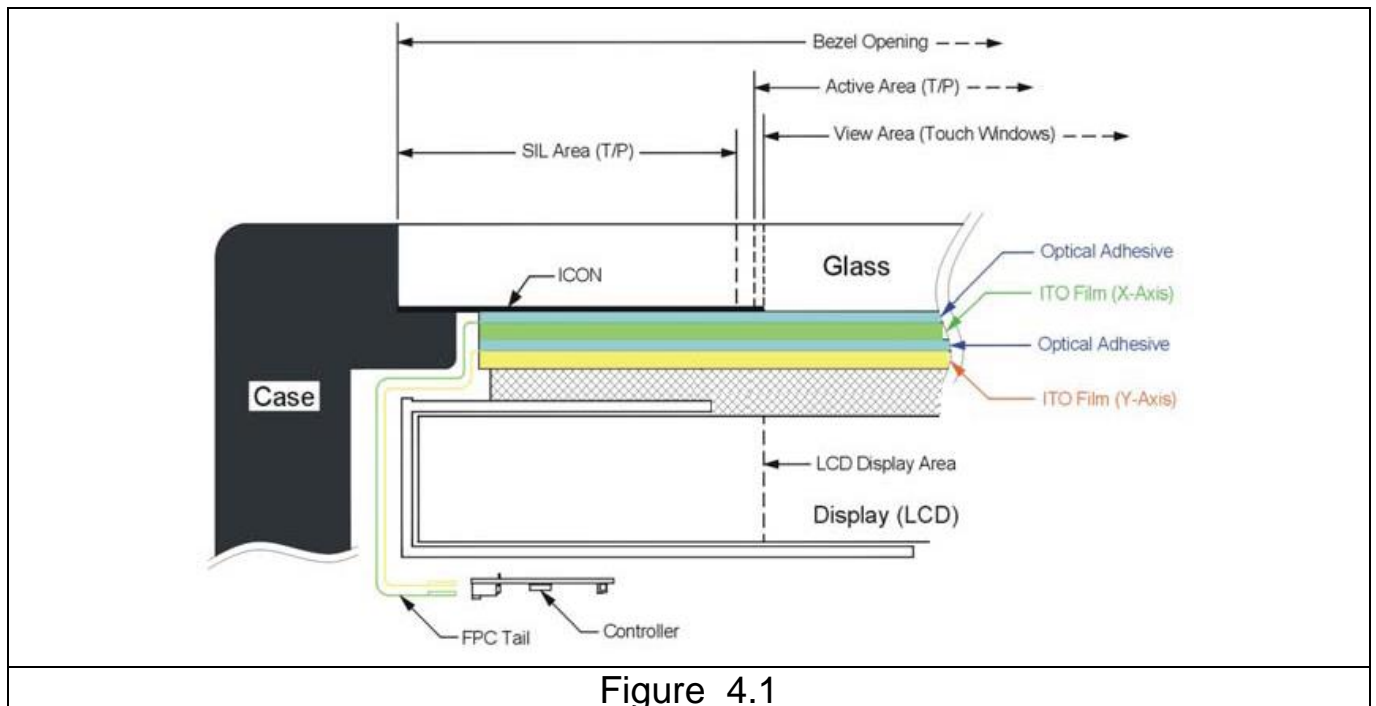
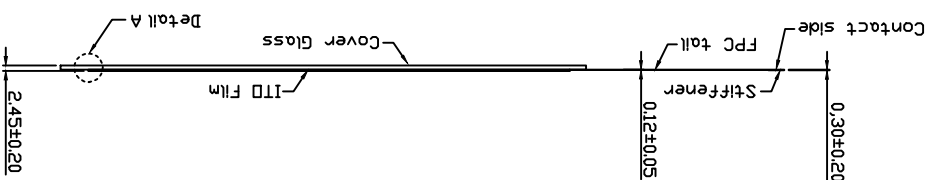
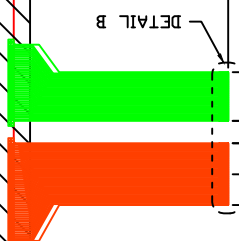
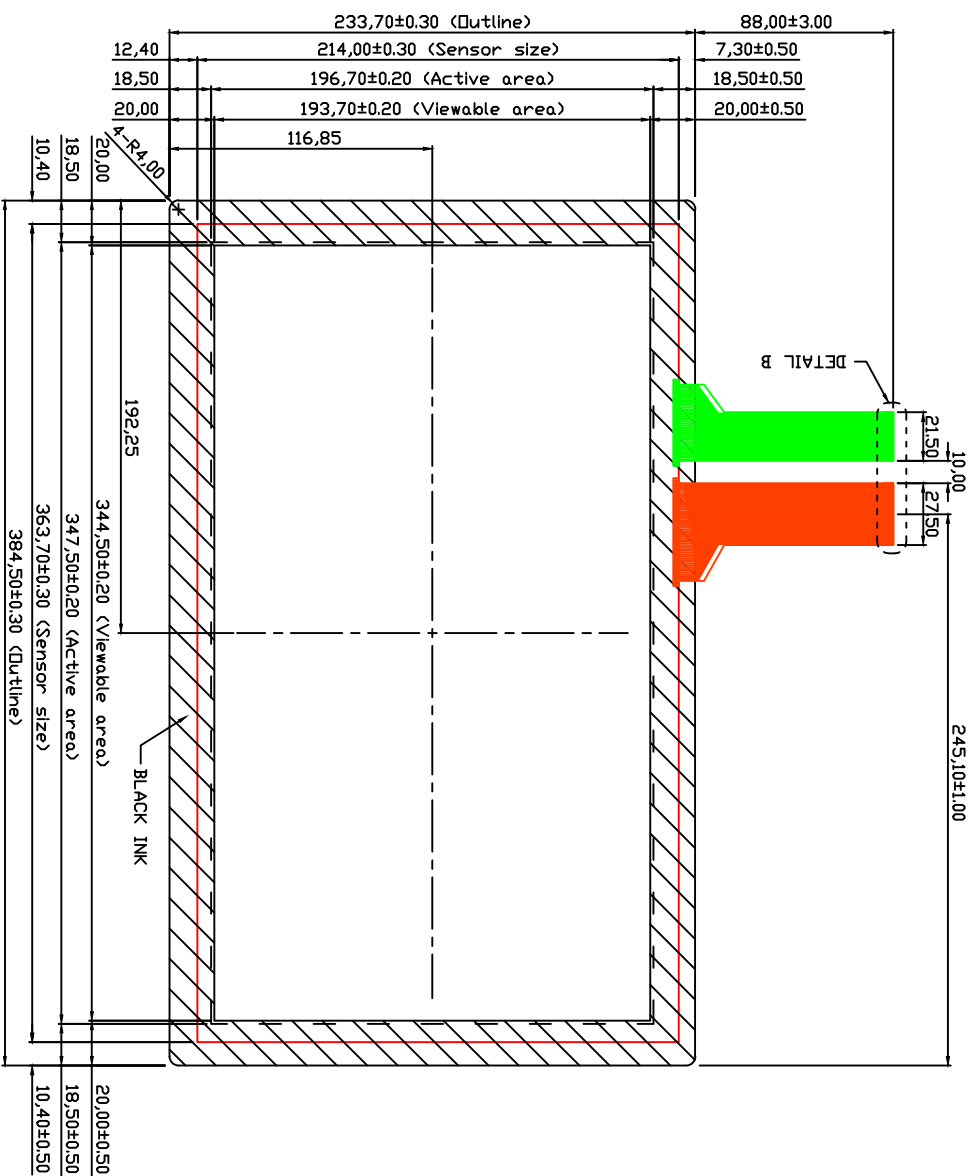


Figure 4.1





TOP VIEW

DETAIL A

COVER GLASS 1.8t  
Optical Adhesive  
ITD FILM  
Optical Adhesive  
ITD FILM

DETAIL B

THIRD ANGLE	MODEL	15.6" PCT Touch Panel	REV	01	DATE	2014.01.21	DESIGN	Eric	DATE	2014.01.21	APPROVED	Eric
DRAWING NO.	20156004	奇維科技股份有限公司 Miracletouch Technology Inc.										