nas Technologies Corp.
啟迪科技股份有限公司

Specification(Ver.1.0)
of
NTP043CMN0

Proposed By			Customer's Approval
Designed	Checked	Approved	

nas Technologies Corp.
啟迪科技股份有限公司

Revision History

Date	Rev.	Contents	Remark
20091116	1.0	- New Create	-

nas Technologies Corp.
啟迪科技股份有限公司

Table of Contents

1. Feature

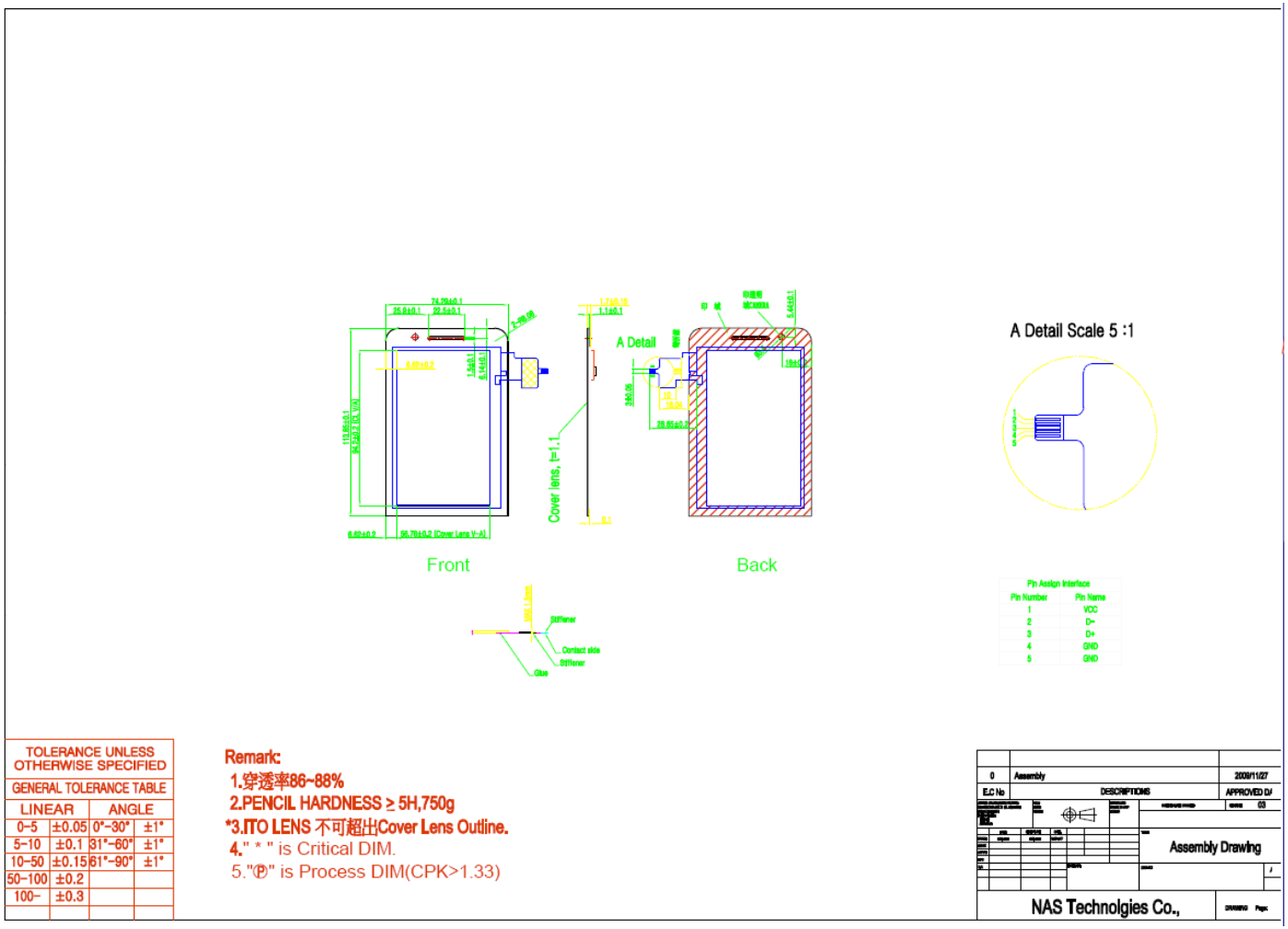
The product is a 4.3” projective capacitive touch panel with 5 points gesture function. The touch panel is composed of customized coverlens, ITO sensor glass and FPCa with sensor IC. For which, the optical adhesive is applied for lamination between coverlens and senor glass to ensure good optical performance of touch panel.

2. General Specification

2.1 Outline Specification

Item	Description	Unit
Size	4.3	inch
View Area	94.2 ±0.2 * 56.76 ±0.2	mm
Outline Area	113.85±0.2 * 74.29±0.2(without FPCa)	mm
Transmittance	> 85% *(Note 1)*	-
TP Resolution	800*480	Dot
Sensor Solution	FT5201+C8051F342(F34A)	-
Note1: Transmittance includes ITO touch sensor, cover-lens and lamination thickness.		

3. Mechanical Drawing



4. Electrical Specifications

4.1 Absolute Maximum Ratings

Parameter	Min.	Typ.	Max.	Units	Notes
Storage Temperature	-30	25	+80	℃	Note1
Ambient Temperature with Power Applied	-20	-	+70	℃	-
Voltage on VDD with respect to GND	-0.3	-	+4.0	V	-
Voltage on any Port I/O Pin with respect to GND	- 0.3	-	+5.8	V	-

Note1:
Higher storage temperatures reduce data retention time. Recommended storage temperature is +25℃.Extended duration storage temperatures above 65℃ degrade reliability.

4.2 DC Electrical Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Units
Power Supply	-	4.8	5	5.2	V
Current Consumption For Operation	VDD = 5V	-	8	10	mA
Current Consumption For Sleep Mode	VDD = 5V	-	100	200	uA

Note: It may cause permanent damage to the device due to over stress the maximum. Exposure to maximum rating conditions for extended periods may affect device reliability also.

5. Pin Assignment

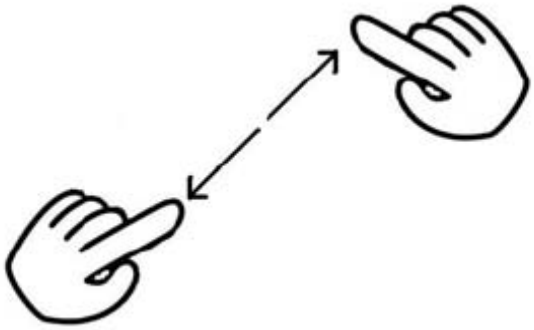
Pin No.	Symbol	Description	Note
1	VDD	Power Input	-
2	D-	USB D-	-
3	D+	USB D+	-
4	GND	Reference Ground	-
5	GND	Reference Ground	-

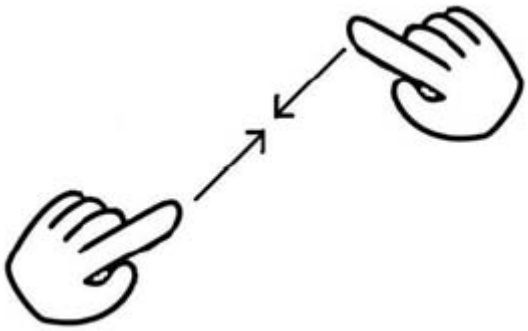
6. Firmware Protocol

6.1 USB I/F

BYTE	DESCRITION
T.B.D.	T.B.D.

6.2 Gesture Code

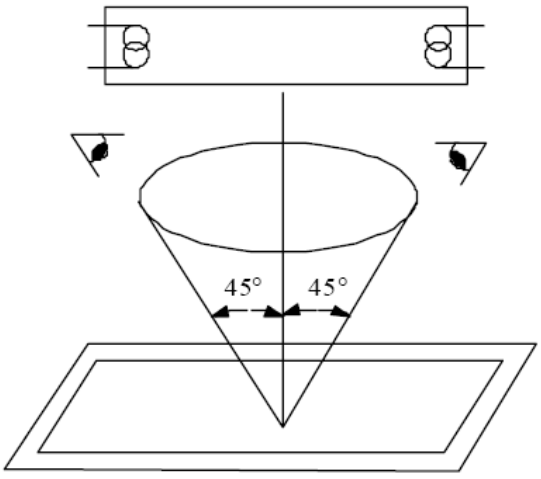
Gesture	Code	Description
No Gesture	T.B.D.	Without finger on the touch sensor
Signal Touch Slide Left	T.B.D.	
Signal Touch Slide Right	T.B.D.	
Signal Touch Slide Down	T.B.D.	
Signal Touch Slide Up	T.B.D.	
Multi Touch Zoom In	T.B.D.	

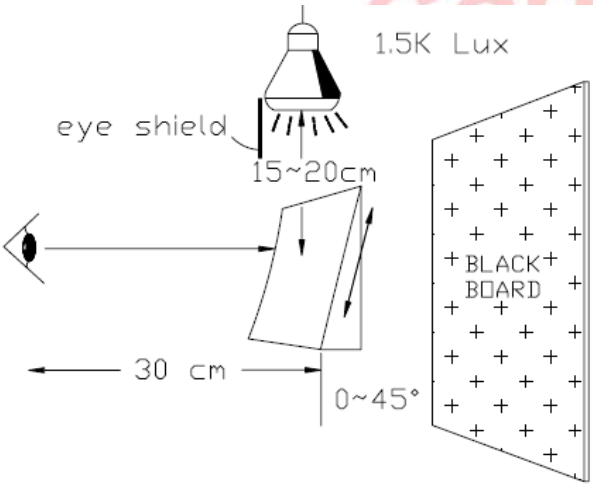
Multi Touch Zoom Out	T.B.D.	
Signal Touch Rotation CW	T.B.D.	
Signal Touch Rotation CCW	T.B.D.	

7. Inspection Conditions

7.1 Environmental Conditions

- Observation distance: 30±5 cm
- Viewing Angle: ±45°
- Background Color: Black
- Ambient Temperature: 20℃ ~ 30℃
- Ambient Humidity: 55±10%RH
- Ambient Illumination: > 1500LUX
- View angle should be smaller than 45°

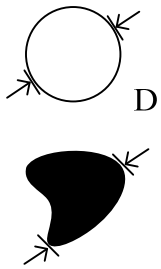
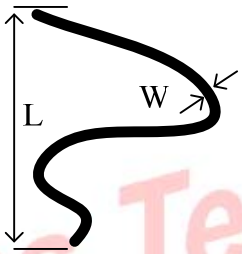
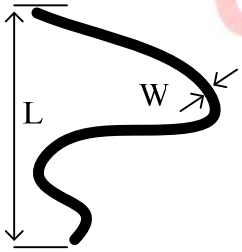
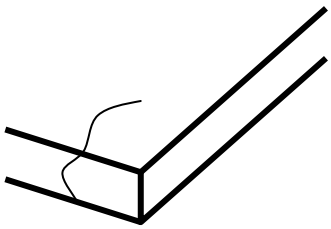


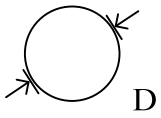
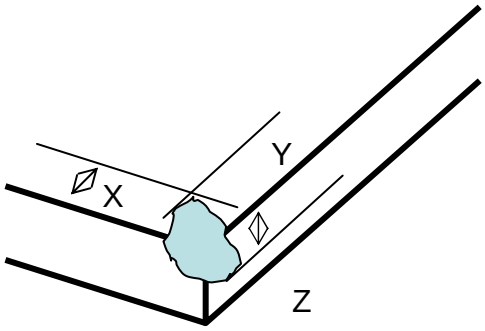


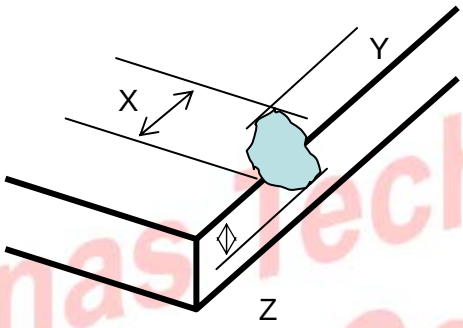
7.2 Inspection Plan

- Follow MIL-STD-105E, normal, level II, AQL = 1.0

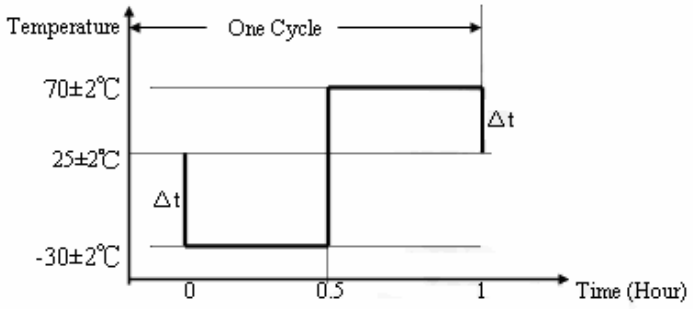
8. Inspection Standards

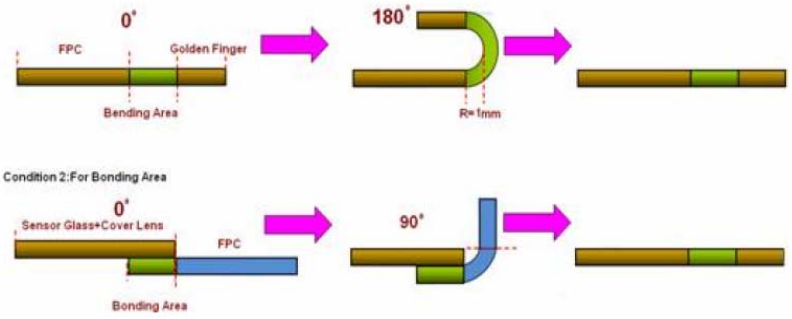
Item	Inspection Criteria	Judgment
Black & White Spot 	The following black / white spot are within the viewing area Average Diameter: D (mm)	
	D≦ 0.1mm	Ignored
	0.1mm＜D≦0.3mm S>10mm	2
	0.3mm＜D≦0.5mm	1
	D>0.5mm	0
Scratch 	The following black / white lines are within the viewing area. Width: W(mm), Length: L(mm)	
	W ≦ 0.02mm	Ignored
	0.02mm ＜ W ≦ 0.03mm, L≦5mm	3
	0.03mm ＜ W ≦ 0.05mm, L≦5mm	2
	W ＞ 0.05mm	0
Linear Type / Foreign Fiber 	The following black / white lines are within the viewing area. Width: W(mm), Length: L(mm)	
	W ≦ 0.02mm	Ignored
	0.02mm ＜ W ≦ 0.03mm, L≦5mm	2
	0.03mm ＜ W ≦ 0.05mm, L≦5mm	1
	W ＞ 0.05mm	0
Crack 	Not Acceptable	-

<table>
<tr><td rowspan="5">Bubble / Dent
 
</td><td colspan="2">Bubbles within viewing area. Average diameter: D(mm)</td></tr>
<tr><td>D≦ 0.2mm</td><td>Ignored</td></tr>
<tr><td>0.2mm ＜D≦ 0.3mm</td><td>3</td></tr>
<tr><td>0.3mm ＜D≦ 0.5mm</td><td>1</td></tr>
<tr><td>D＞ 0.5mm</td><td>0</td></tr>
<tr><td rowspan="2">Chipping on Glass
 

 
</td><td colspan="2">Corner: X + Y ≦ 4mm , Z ≦ t
(t : thickness)</td></tr>
<tr><td colspan="2">Edge: X ≦ 6mm, Y≦ 1mm, Z ≦ t
(t : thickness)</td></tr>
</table>

9. Reliability

No.	ITEM	DESCRIPTION	NOTE
1	High Temperate Storage	80°C, 240 hrs. No malfunction or abnormal should be found. Linearity Error should be no larger than △20 coordinates before/after the test.	5ea
2	Low Temperate Storage	-30°C, 240 hrs. No malfunction or abnormal should be found. Linearity Error should be no larger than △20 coordinates before/after the test.	5ea
3	Temperate/ Humidity	60°C, 90%RH, 240 hrs. No malfunction or abnormal should be found. Linearity Error should be no larger than △20 coordinates before/after the test	5ea
4	Thermal Shock	-30°C / 70°C, 30min for each dwell stage, 50 cycles. Temperature transition Duration: 3 min, No malfunction or abnormal should be found. Linearity Error should be no larger than △20 coordinates before/after the test. 	5ea
5	FPC Bending Test	Connector side: Bending angle will be decided per different project. Touch Panel side: Bending angle will be decided per different project Minimum 10 cycles for each side - Condition1 for flex circuit - Condition 2 for glass Criterion: Normal performance after bending test. There shall be no damage on FPC	-

		FPC Bending Test: Condition 1:For Bending Area  Condition 2:For Bonding Area 	
6	FPC connection Insert / Remove test	Condition: Insert / Remove flex circuit for 10 cycles Criterion: Normal performances after flex circuit connection insert / remove test.	-