



安勤科技股份有限公司

APPROVAL SHEET

NO.APP-181147

QD4-015 Rev.B4

申請種類: 正式承認

料號	E968X000152R
品名	HH 恆顯 21.5" OGS Touch HS-T215NN01-G8SA w/EETI 3188 controller

製造商	恆顯
廠商型號	HS-T215NN01-G8SA

Update 原因說明	
庫存說明	
其它	



### 安勤科技 測試報告

測試日期	2018-05-15 12:43:32	測試樣品數	1 PCS
測試項目	項目	測試條件	結果
	外觀	核對實物與照片是否相符	Pass
	材質	依承認圖面所標示的接線圖實際量測	Pass
	電氣特性		
	機械強度		
	實裝動作	實際安裝以確認是否與承認書相符	Pass
	破壞實驗		
	顏色	依照片或圖面標示之顏色為檢驗準	Pass
	尺寸	依照片或承認圖面所標示之尺寸為檢驗標準	Pass
	沾錫性		
	壽命實驗		
	安規		
	其它測試		
備註			
測試結果	符合測試條件及規格		

備註:

1. 申請人需先至GPM/管理/物料MCD設定/料號-審核狀態為通過，查詢此料已完成GREEN的承認，再

辦理規格等承認。

2. 本單不能代替採購單及其它用途。

3. 如涉及專利及法律之問題, 應由送樣廠商負全責。

4. 以下內容所註記, 已經檢驗過並給予承認。

5. 申請承認需依料階符合「承認應備文件和檔案」

## Workflow

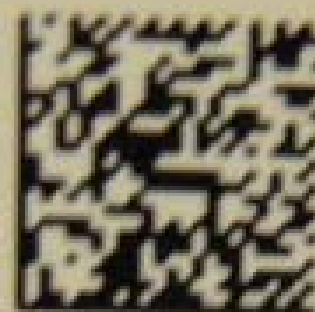
Workflow Status	Action	Signoff User	Local Client Time	Signoff Comments
Initial (填表人)		ARM Jeff Huang (黃啟禎)	2018-05-15 00:56:08	
Manager Review	Approved	ARM Dennis Hsieh (謝政遠)	2018-05-15 08:59:03	
PDC & QC	Approved	QA-QC Jeason_Shen (沈俊輝)	2018-05-15 13:51:56	
PDC & QC	Approved	PDC Joy Lu (盧昶卉)	2018-05-15 14:59:30	
PDC Head	Approved	PDC Mandy Huang (黃意婷)	2018-05-15 15:09:46	







TP1




HS-T215NND  
1-G85A-7AO  
-10074

人

02HS-T215NN01 FPC1

 E252774 CP-F29 LC

94V-0  2











恆顯科技股份有限公司  
*Henghao Technology Co.,Ltd.*

# Specification for

## Projective Capacitance Module

Henghao No. HS-T215NN01-G8SA

Version : 2

Customer Approval		HengHao Technology Co. Ltd.		
		Approval	Checked	PM
Signature		Andy.Liu	Sky.Wu	Parker.Wang
Date		2017/11/22	2017/11/22	2017/11/22

- ☐Approval for SPEC  
☒Approval for Sample



## History of version

Ver.	Date	Description	Page	Note
1	2017/04/06	initial	-	Spec.
2	2017/11/22	1. Modify FW test ver to 01 ver 2. Modify corner R5 to R2		Sample SPEC



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## 1. Product scope

This specification is applied to sensor product made by Henghao Technology Co.,Ltd.

## 2. General Characteristics

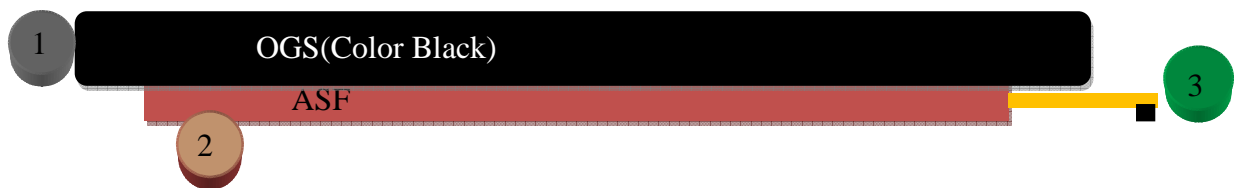
### 2.1 General

ITEM		Description	Note
1	Size (active area)	21.5"	-
2	TP Type	OGS	
3	Multi-Touch	10 Fingers	-
4	IC	EETI EXC3188 (PCB)	-
5	Approx. Weight	430	g
6	Interface	USB/RS232	
7	Firmware versiion	01	Ver

Note1. Firmware version Bar code

說明	第 1~3 碼	第 4~5 碼
	Project Name	FW version
編碼實例	A215	01
Remark	Avalue 21.5" = A215	FW 流水號

### 2.2 Product (OGS) Structure.



### Key component material list

No.	Item	Specification	Remark
1	OGS	CG Sodlime 1.1mm	
2	ASF	100um	
3	FPCa	2 layer	

### 3. Electrical Characteristics(Touch)

#### 3.1 Absolute Maximum Rating

ITEM	SYMBOL	MIN	TYP	MAX	UNIT	Remark
Operating Temperature	T <sub>A</sub>	-20	-	60	°C	
Storage Temperature	T <sub>STR</sub>	-30	-	70	°C	
Static Electricity	Make sure the TP grounded while handing					

Note : The product may be damaged permanently while operating with the restricted conditions.

#### 3.2 Interface Definition

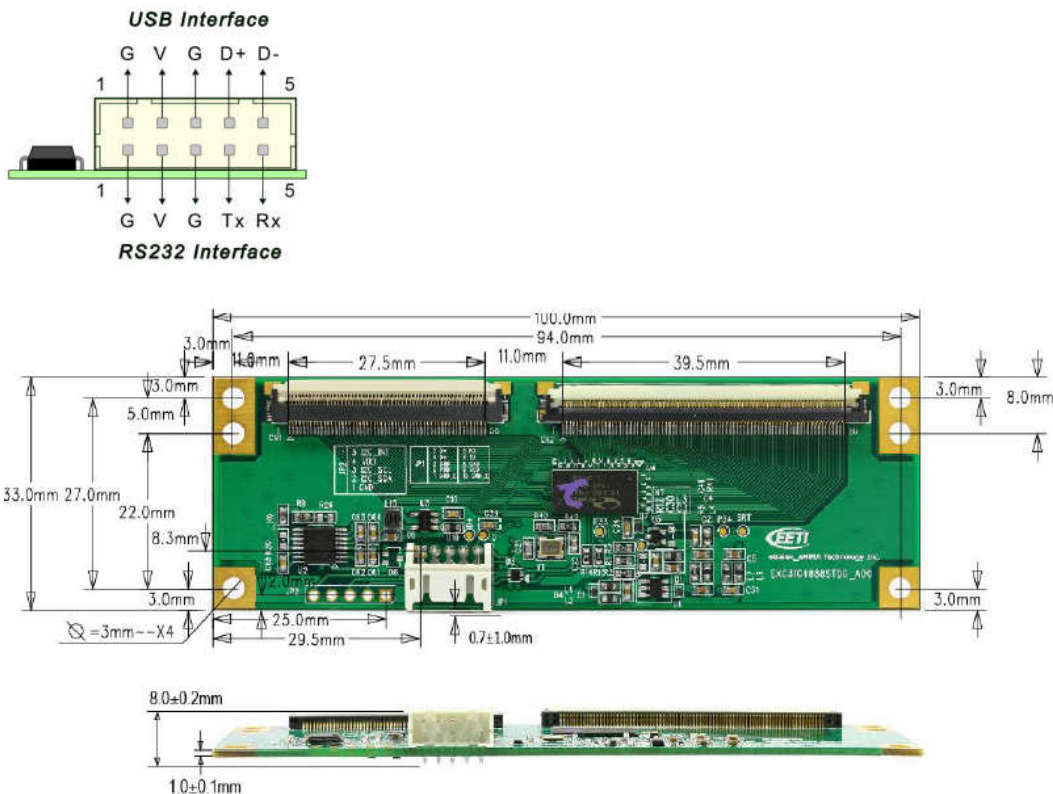
##### 3.2.1 PCB Connect USB Interface:

NO.	PIN	Define	Description	Note
1	GND_E		Ground	
2	VDD		Power voltage +5v	
3	GND		Ground	
4	D+		USB single	
5	D-		USB single	

##### 3.2.1 PCB Connect RS232 Interface:

NO.	PIN	Define	Description	Note
1	GND_E		Ground	
2	VDD		Power voltage +5v	
3	GND		Ground	
4	TX		RS232 single	
5	RX		RS232 single	

##### 3.2.2 PCB Output Interface





### 3.3 Electrical Characteristic

Parameter		Symbol	Values			Unit	Notes
			Min	Typ	Max		
Power Supply Input Voltage		VDD	4.5	5	5.5	V	
Power Supply Input Current	Active	I <sub>DD</sub>	-	-	100	mA	
	Idle	I <sub>DD</sub>	-	-	50	mA	
Report rate		(points/sec)	>100Hz			Hz	1

Note 1: Report rate will vary by channel number ,cover thickness and other parameters.

## 4. Physical Characteristics

### 4.1 Optical Characteristics

NO.	Item	Specification	Note
1	Panel Transmittance	Min $\geq 88\%$	
2	Haze	Max $\leq 2.5\%$	

### 4.2 Mechanical Characteristics

NO.	Item	Specification	Note
1	Outline Dimension	V: 292.2 mm H: 495.6 mm	
2	View Area	V: 269.39 mm H: 477.66 mm	
3	Total Thickness	1.2mm	
4	Surface Hardness	>7H	
5	TP air bonding to LCM polarizer gap	>1.0mm	
6	Warping	<1.3mm	

Ver.	REVISION RECORD	DATE
1	由HS-T215NN01-TAS1-102附生修改O/D外形尺寸	2017.10.05
2	變更PF ASF 外型設計	2017.10.27
3	-	-
4	-	-

NOTE: 1.Tolerance not specified: .X= ±0.3 .XX=±0.3 .X=±2° .XX=±1°  
2."( )"Means Reference Dimensions.  
3."☒"Means important dimension. The Cpk must > 1.33  
4.Un show Fillet Radius : R=0.5mm  
5.CN1 Spec: Aces 50501-05601-001  
CN2 Spec: Aces 50520-08001-001  
6.IC: EETI EXC3188

☒ 495.6±0.2  
(479.064)(TP A/A)  
477.66±0.2(TP V/A)  
(476.064)(LCM A/A)  
8.97±0.3 (9.77)  
11.4±0.3 (12.2)  
BASE  
☒ 292.2±0.2 (270.786)(TP A/A)  
269.39±0.2(TP V/A)  
(267.786)(LCM A/A)  
100±0.5  
208.3±0.5 (197.8)  
HH Label  
94.95  
2.75±0.3  
Bending Area  
PCB 組裝示意圖  
2-(0.2)  
2.7±0.3  
2-5.3±0.3

Detail A  
Scale 2X

Detail B  
Scale 2X

CN3:59012-0100N-003  
DETAIL PCBa  
SCALE 1X

☒ 1.21±0.12(with ASF)  
1.1±0.1(CG)  
494.6±0.3(ASF)  
0.5±0.5  
0.5±0.5  
291.2±0.3(ASF)  
ASF  
AS Coating  
Metal Side  
INK : Black C  
2-(0.15)  
All Around  
5.3±0.3  
0.3±0.3  
0.5±0.05  
0.35±0.03  
3.3±0.3  
2-0.5±0.1  
39.5±0.05  
Detail A  
Scale 2X  
DCT 2K FPC on Glass  
30±0.2  
40.5±0.07  
3.9±0.2(FPC fix)  
28.5±0.07  
0.5±0.05  
0.35±0.03  
3.3±0.3  
2-0.5±0.1  
27.5±0.05  
Detail B  
Scale 2X  
Release ear

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Manufacturer Acceptance Signature	DREW BY, DATE	CHECK BY, DATE	APPROVED BY, DATE	Drawing Name:
	Evans.Chen 2017.10.27	Helen.Liu 2017.10.27	Parker.Wang 2017.10.27	Assembly

Drawing No.

HS-T215NN01-TAS2-102

Model No.

HS-T215NN01

HengHao Technology CO., LTD

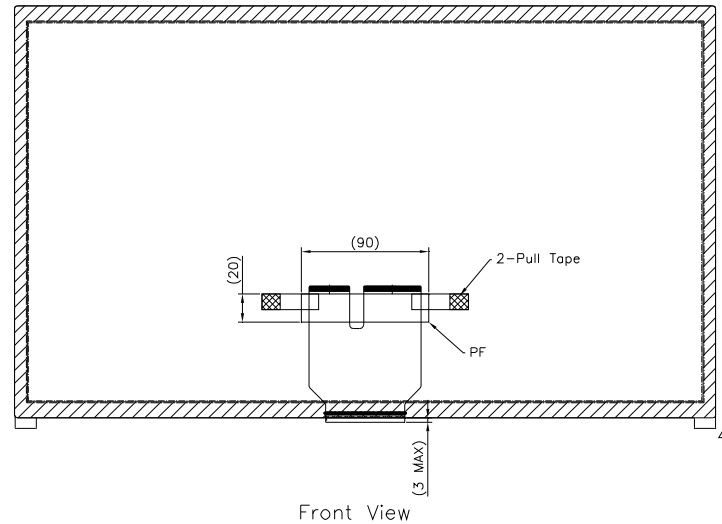




Ver.	REVISION RECORD	DATE
1	由HS-T215NN01-TAS1-102修正修改O/D外形尺寸	2017.10.05
2	變更PF ASF 外型設計	2017.10.27
3	-	-
4	-	-

NOTE: 1.Tolerance not specified: .X=  $\pm 0.3$  .XX= $\pm 0.3$  .X= $\pm 2^\circ$  .XX= $\pm 1^\circ$   
2."( )"Means Reference Dimensions.  
3."□"Means important dimension. The Cpk must > 1.33  
4.Un show Fillet Radius : R=0.5mm

SCALE	THIRD ANGLE PROJECT	DN
1 : 1		unit:mm



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Manufacturer Acceptance Signature 	DREW BY, DATE Evans.Chen 2017.10.27	CHECK BY, DATE Helen.Liu 2017.10.27	APPROVED BY, DATE Parker.Wang 2017.10.27	Drawing Name: Assembly
	恆顥科技股份有限公司 HengHao Technology CO., LTD			Drawing No. HS-T215NN01-TAS2-202 Model No. HS-T215NN01



## 5. Reliability Test

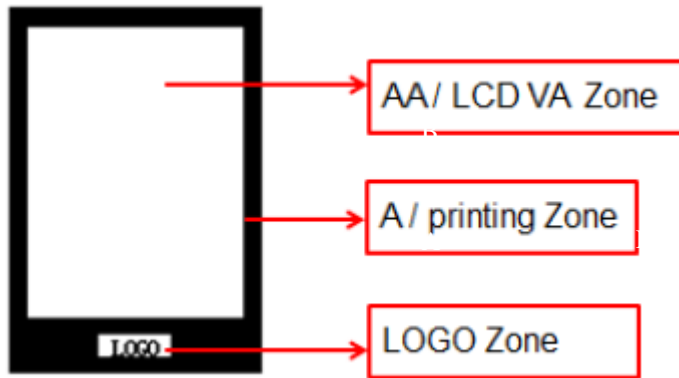
No	Item	Specification	Q'ty	Note
1	High Temperature-Storage	$70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 240hr 1. Change the temperature and humidity to the set value ( $+70 \pm 3^{\circ}\text{C}$ ) during a 1-hour ramp. 2. Hold the temperature for 240 hours. 3. Decrease the temperature to $+21^{\circ}\text{C}$ during a 1-hour ramp. 4. After minimum 3 h at ambient conditions, power on to check functionality.	3pcs	
2	Low Temperature-Storage	$-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$ / 240hr 1. Change the temperature and humidity to the set value ( $-10 \pm 3^{\circ}\text{C}$ ) during a 1-hour ramp. 2. Hold the temperature for 16 hours. 3. Decrease the temperature to $+21^{\circ}\text{C}$ during a 1-hour ramp. 4. After minimum 3 h at ambient conditions, power on to check functionality.	3pcs	
3	Thermal shock	$-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$ / $70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , 70 min / cycle, once cycle 30 minutes at each temperature extreme including a 0-5 minute transition time, 30 cycles total. 1. powered off state to the temperature profile for 30 cycles. 2:- After minimum 3 h at ambient conditions, power on to check functionality.	3pcs	
4	Temp/ Humidity Non-OP	$50^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Humidity: $90 \pm 5\% \text{ RH}$ 24hr	3pcs	
5	Ball drop	250g / 82cm / TP VA center point 1 time	3pcs	

## 6. Appearance inspection

### 6.1 purpose

To establish appearance standard and maintain product quality.

### 6.2 Scope of reject criteria

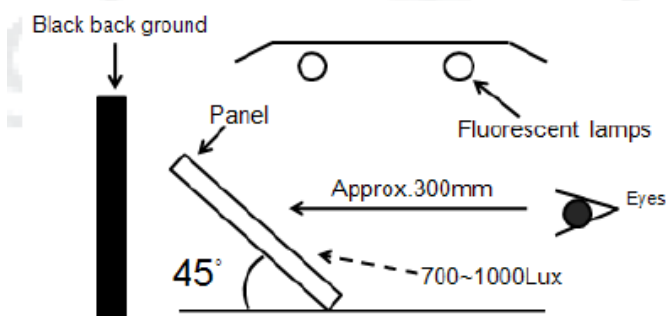


Area	Specification
A	Without any defect point to effect on normal operation.
B	Outside Active Area, None-specify.

### 6.3 Inspection Rule

#### 6.3.1 Inspection condition

- (A) Environmental luminance : 800~1200 Lux, light source distance 50cm~55cm
- (B) Light source : Fluorescent lamp
- (C) Light source color temperature : 6500K
- (D) Distance between human eyes and panel : 30cm ~50cm
- (E) Visual angle : 45 degree of all around
- (F) Background : Black
- (G) Inspection Time : 5S~10S



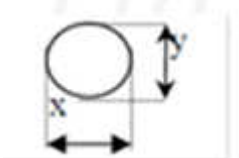
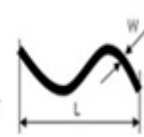
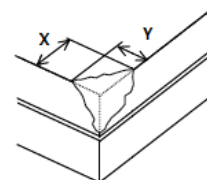
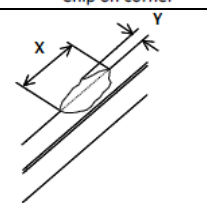
#### 6.3.2 Judge criterion

Judgment under above mentioned criterion (panel must be tested under light transparent), testing goods defect can be visible within 10 seconds, which will be judged as major defects.

#### 6.3.3 FQC Sampling standard:

Sampling criteria: MIL-STD-150E Level II AQL MA:1.0 , MI: 1.5

## 6.4 Inspection criteria

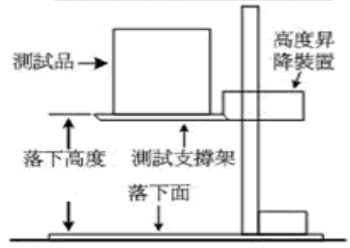
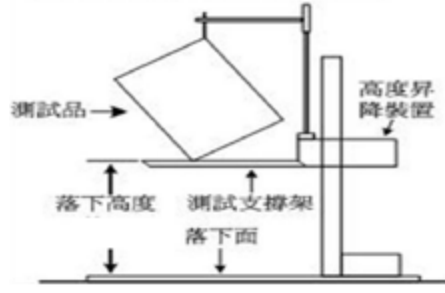
Item	Reject criteria			Defect level
Dot defect (particle/dust/light dot) With Zone AA/ Zone logo / Zone A	$D \leq 0.4\text{mm}$	Ignore	$D = (X+Y)/2$ 	MA
	$0.4\text{mm} < D \leq 0.6\text{mm}$	$n \leq 6$		
	$0.6\text{mm} < D$	0		
Bubble / Dent With Zone AA	$D \leq 0.4\text{ mm}$	Ignore		MI
	$0.4\text{mm} < D \leq 0.6\text{mm}$	$n \leq 6$		
	$0.6\text{ mm} < D$	0		
Line defect (Scratch , fibre , foreign matter) With Zone AA/ Zone logo / Zone A	$W \leq 0.1\text{mm}$	Ignore	$W$ : Width $L$ : Lenth $N$ : Number 	MI
	$L \leq 15\text{mm}$	$n \leq 6$		
	$0.10\text{mm} < W \leq 0.20\text{mm}$	0		
Corner 、Edge Chipping	$X \leq 2\text{mm}$ and $Y \leq 2\text{mm}$ $T \leq \text{Glass thickness}$	$N \leq 3$	 Chip on corner	MA
	$X \leq 2\text{mm}$ and $Y \leq 1.5\text{mm}$ $T \leq \text{Glass thickness}$ $DS \geq 10\text{mm}$	Each edge $N \leq 3$	 Chip on edge	
Pin hole	$D \leq 0.1$	ignore		

### Notes :

- Identical particle and dirty by visual, will judged as Dot defect.
- D 直徑、W 寬度、L 長度、DS 間距、N 數目

## 7. Packing flow

### 7.1 Package drop test

Spec	Remarks
<p>By using the material of PET and EPE, go through the product test by 1 corners/3 edges/6 faces drop test. The test result need to meet the follow criteria :</p>	<p>落下測試 正面測試作業方示意图</p> 
	<p>落下測試 側面測試作業方示意图</p> 

## 7.2 Packing procedure

### 一、包裝流程：



→ 將 FPC 處反折後，  
將 1pcs 產品以靜  
電包裝並封口。



→ 在紙箱內放入  
EPE-1 放入底部，  
蓋板及側板組立後  
放入。(Note 7)



→ 以 FPC 朝下依序將  
產品一片一片放入  
EPE 卡槽內。



→ 蓋上紙蓋板將插卡  
反折 OPP 貼附並放  
置 EPE-1 1pcs；再  
封箱貼上出貨外箱  
標籤及廠內 L/N 標  
籤。

### 二、包裝配置：

成品數：	1 pcs T.P / per SB	12 pcs
成品數量：	10pcs SB / per Carton	12 pcs
成品數量：	10 pcs Carton / per Pallet	120 pcs

### 三、包裝標籤規格：

1、出貨標籤格式：110mm x 70mm (字型 Arial ,黑色字體)  
詳細說明請參考備註說明

安勤科技股份有限公司出貨標示單	
供應商：	
安勤料號：	
生產批號：	
製造日期：	
規格：	
訂單號碼：	交貨日期：
數量：	製造商：
UL File Number：	
UL Company Name：	
生產地： Made in	
	註一

2. L/N.標籤：80mm x 40mm (字型 Arial ,黑色字體)

	(HH P/N )
批號(L/N)：	(數量)
(條碼)	(總數量)



## 7.3 Packaging

### 7.3.1 Storage

#### 7.3.1.1. Storage condition

Temperature: 20~30°C / Humidity: 50~60%RH

7.3.1.2. Goods must be kept in original package for long term storage.

7.3.1.3. Don't expose goods under sunshine.

7.3.1.4. Please store the carton according to the UP/DOWN mark for the proper direction.

### 7.3.2 Taking off package

7.3.2.1. When unpack the package, please open the carton according to the UP/DOWN mark for correct procedure.

## 7.4 Delivery

Avoid of high humidity and high temperature. Extremely high or low temperature will have serious influence on the quality.

## 8. Precautions in use of touch panel

### 8.1 Purpose

In order to prevent accidental use and performance deterioration, please keep the following precautions and inhibited points.

### 8.2 Cautions for storage

Store the products at the temperature and humidity mentioned in the specification in a state of package with care not to expose the products to the direct sunlight or stresses.

Do not store the touch panel in a high temperature and humidity for a long period of time and avoid storage in the environment where condensation could arise.

### 8.3 Cautions for unpacking

Check the vertical direction before unpacking.

### 8.4 Cautions for handling

8.4.1 Transparency is an important factor for the product. So, please wear clean finger sacks, gloves and mask to protect the products from fingerprint or stain attach, and also hold the portion outside the view area when handling the panel.

8.4.2 Do not put a heavy, hard or sharp object on the product. Film of traces by T-bar area do not pinched .

8.4.3 When attaching a protection sheet on this product at customer side, please confirm its characteristic in advance whether any damage is given to this product. Although some changes may arise in the function of this product by the protection sheet attachment such as operation, cosmetic, etc., however those changes are out of our guarantee.

8.4.4 Even when attaching a protection sheet with adhesion material by our side based on the request from customer, some changes may arise in the function of this product by the protection sheet attachment such as operability, cosmetic, etc., however those changes are out of our guarantee.

## 9. Product Substance Management

9.1 Base on internal document WI-NP04-A001(綠色產品管制物質標準) to control the material restriction.





## 10. Others

- 10.1 Any issue or dispute on the specification, must be subjected to change after negotiation.
- 10.2 Revision of the spec. must follow up with written documentation first then is valid.
- 10.3 If Spec. sheet is different to individual spec., please follow up individual spec.
- 10.4 HengHao has no liability for any random spec. modification by buyers without both parties agreement.
- 10.5 HengHao will provide (sensor 3 Months, module 6 month) un-packing product guarantee under operation condition described in this specification.
- 10.6 The clean operation is allowed only Dehydrated alcohol.
- 10.7 HengHao do not guarantee the product specification with re-work samples which do not process in HengHao.