

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

TO :

Date : Nov., 2, 2018

深 圳 市 智 诚 光 电 发 展 有 限 公 司

Product Specification

 **15.6" Color TFT-LCD Module**

Model: **HSD156GSY-A10**

- Note: (1) The information contained herein is tentative and may be changed without prior notices
- (2) Please contact HannStar Display Corp. before designing your product based on this module specification.
- (3) The information contained herein is presented merely to indicate the characteristics and performance of our products. No responsibility is assumed by HannStar for any intellectual property claims or other problems that may result from application based on the module described herein.
- (4) The mark “ ** ” of Model means sub-model code.

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

Record of Revisions

Rev.	Date	Sub-Model	Description of change
1.0	Oct., 22, 2018	-A10	Specification was first version



Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

Contents

1.0	General description	p.4
2.0	Absolute maximum ratings.....	p.5
3.0	Optical characteristics.....	p.6
4.0	Block diagram	p.10
5.0	Interface pin connection	p.12
6.0	Electrical characteristics	p.14
7.0	Reliability test items	p.19
8.0	Outline dimension	p.20
9.0	Lot mark	p.21
10.0	Package specification	p.22
11.0	General precaution	p.23



Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

1.0 GENERAL DESCRIPTION

Introduction HannStar Display model HSD156JUW2-A is a color active matrix thin film transistor (TFT) liquid crystal display (LCD) that uses amorphous silicon TFT as a switching device. This model is composed of a TFT LCD panel, a driving circuit and a back light system. This TFT LCD has a 15.6 inch diagonally measured active display area with FHD (1920 horizontal by 1080 vertical pixel) resolution.

Features

- 15.6 (16:9 diagonal) inch configuration
- Two channel LVDS interface
- 16.7M color by 8 bit R.G.B signal input
- RoHS Compliance
- Halogen Free

Applications

- Automotive

General information

Item	Specification	Unit	
Outline Dimension	359.56*217.7*3.1(Typ.)	mm	
Display area	344.16(H) x 193.59(V)	mm	
Number of Pixel	1920 RGB (H) x 1080(V)	pixels	
Pixel pitch	0.1792(H) x 0.1792(V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display mode	Normally Black		
NTSC	70(Typ.)	%	
Surface treatment	HC		
Weight	TBD (Typ.)	g	
Back-light	White LED		
Power Consumption	Logic System (White Pattern)	TBD	W
	B/L System	14.592W (Max.)	W

Mechanical Information

Item	Min.	Typ.	Max.	Unit	
Module Size	Horizontal (H)	359.26	359.56	359.86	mm
	Vertical (V)	217.2	217.7	218.2	mm
	Depth (D) w/ PCB	2.9	3.1	3.3	mm
Weight	—	TBD	TBD	g	

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

2.0 ABSOLUTE MAXIMUM RATINGS

Electrical Absolute Rating

TFT LCD Module

Item	Symbol	Min.	Max.	Unit	Note
Logic Supply voltage	VDD	-0.3	6.0	V	

Environment Absolute Rating

Item	Symbol	Min.	Max.	Unit	Note
Operating Temperature	Topa	-10	50	°C	
Storage Temperature	Tstg	-20	60	°C	



Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

3.0 OPTICAL CHARACTERISTICS

Optical specification

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Note	
Contrast	CR	Normal viewing angle	700	1000	—		(1)(2)	
Response time	Rising		T_R	—	—	15	msec	(1)(3)
	Falling		T_F	—	—	15		
White luminance (Center)	Y_L	Normal viewing angle	220	250	—	cd/m ²	(1)(4) ($I_L=120mA$)	
Color chromaticity (CIE1931)	White		W_x	0.275	0.315	0.355		(1)(4)
			W_y	0.240	0.280	0.320		
	Red		R_x	0.605	0.645	0.685		
			R_y	0.294	0.334	0.374		
	Green		G_x	0.250	0.290	0.330		
			G_y	0.570	0.610	0.650		
	Blue		B_x	0.104	0.144	0.184		
			B_y	0.054	0.094	0.134		
Viewing angle	Hor.		Θ_L	—	85	—		
		Θ_R	—	85	—			
	Ver.	Θ_U	—	85	—			
		Θ_D	—	85	—			
Brightness uniformity	BUNI	$\Theta=0$	70	75	—	%	(5)	
Optima View Direction	Free						(6)	

Measuring Condition

- Measuring surrounding: dark room
- LED current I_L : 120mA
- Ambient temperature: 25±2°C
- 15min. warm-up time.

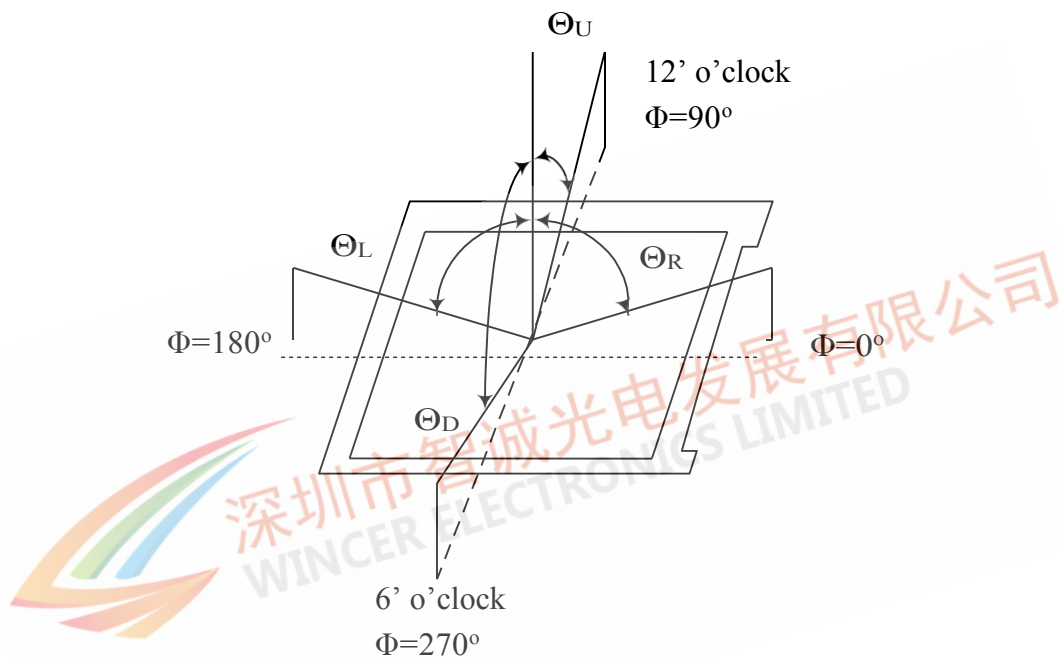
Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

Measuring Equipment

- FPM520 of Westar Display technologies, INC., which utilized SR-3 for Chromaticity and BM-5A for other optical characteristics.

- Measuring spot size: 20 ~ 21 mm

Note (1) Definition of Viewing Angle:

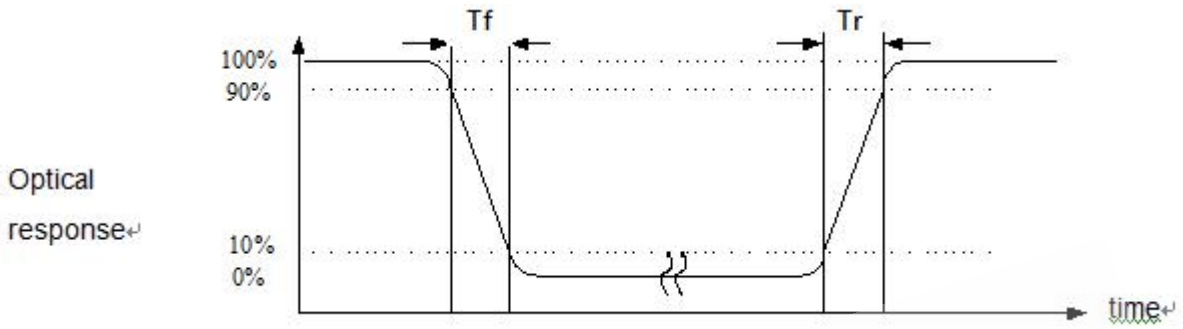


Note (2) Definition of Contrast Ratio (CR) :
measured at the center point of panel

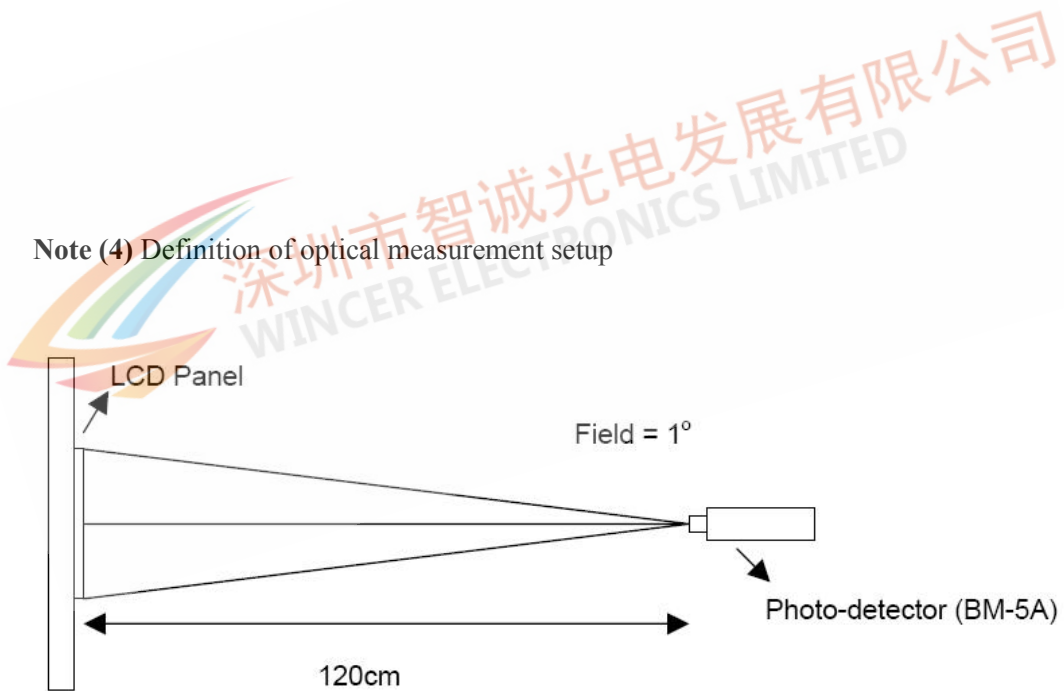
$$CR = \frac{\text{Luminance with all pixels white}}{\text{Luminance with all pixels black}}$$

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

Note (3) Definition of Response Time : Sum of T_R and T_F

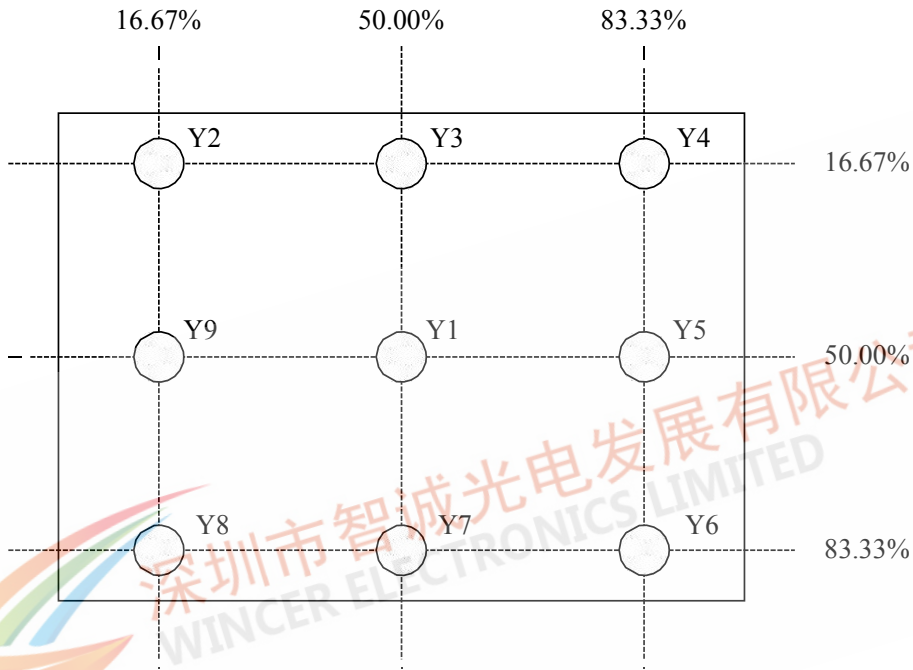


Note (4) Definition of optical measurement setup



Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

Note (5) Definition of brightness uniformity

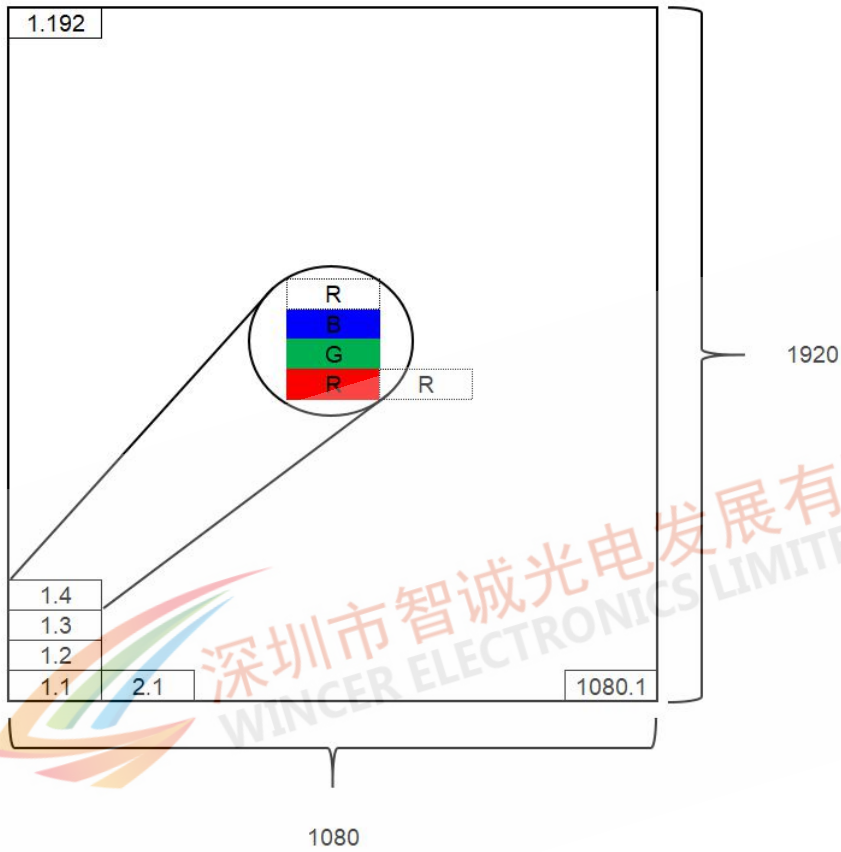


$$\text{Luminance uniformity} = \frac{(\text{Min Luminance of 5 points})}{(\text{Max Luminance of 5 points})} \times 100\%$$

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	1/ 24
Document No.	DC110-003070	Revision	1.0

4.0 BLOCK DIAGRAM

Pixel Format



Document Title	HSD156GSY-A10 Preliminary specification	Page No.	11 / 24
Document No.	DC110-003070	Revision	1.0

Relationship Between Displayed Color and Input

	Display	MSB				LSB				MSB				LSB				Gray scale Level											
		R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0		B7	B6	B5	B4	B3	B2	B1	B0			
Basic color	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	-			
	Blue	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	-			
	Green	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	-			
	Light Blue	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	-			
	Red	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	-			
	Purple	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	-			
	Yellow	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	-			
	White	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	-			
Gray scale of Red	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L0			
	Dark ↑	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L1		
		L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L2	
		:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	L3...L251	
	↓ Light	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L252		
		H	H	H	H	H	H	H	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L253	
		H	H	H	H	H	H	H	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L254
	Red	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	Red L255			
Gray scale of Green	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L0			
	Dark ↑	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L1	
		L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L2
		:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	L3...L251	
	↓ Light	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L252		
		L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L253
		L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	Green	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	Green L255			
Gray scale of Blue	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L0			
	Dark ↑	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L1		
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L2	
		:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	L3...L251		
	↓ Light	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	L252		
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	L253	
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	L254	
	Blue	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	Blue L255			
Gray scale of White & Black	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L0			
	Dark ↑	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L1	
		L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L2
		:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	L3...L251		
	↓ Light	H	H	H	H	H	H	H	H	L	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L252		
		H	H	H	H	H	H	H	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L253	
		H	H	H	H	H	H	H	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L254
	White	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	White L255			

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	12 / 24
Document No.	DC110-003070	Revision	1.0

5.0 Interface pin connection

40Pin Double 8Bit LVDS 接口定义

PIN No.	Symbol	Description	PIN No.	Symbol	Description
1	NC	No Connection	21	Lxin0+	Positive LVDS differential data inputs
2	VDD	Power Supply (5V typ.)	22	GND	Ground
3	VDD	Power Supply (5V typ.)	23	Lxin1-	Negative LVDS differential data inputs
4	GND	EDID +3.3V Power	24	Lxin1+	Positive LVDS differential data inputs
5	Rxin0-	Negative LVDS differential data inputs	25	GND	Ground
6	Rxin0+	Positive LVDS differential data inputs	26	Lxin2-	Negative LVDS differential data inputs
7	GND	EDID Data Input	27	Lxin2+	Positive LVDS differential data inputs
8	Rxin1-	Negative LVDS differential data inputs	28	GND	Ground
9	Rxin1+	Positive LVDS differential data inputs	29	LxCLK-	Negative LVDS differential clock inputs
10	GND	Ground	30	LxCLK+	Positive LVDS differential clock inputs
11	Rxin2-	Negative LVDS differential data inputs	31	GND	Ground
12	Rxin2+	Positive LVDS differential data inputs	32	Lxin3-	Negative LVDS differential data inputs
13	GND	Ground	33	Lxin3+	Positive LVDS differential data inputs

Document Title	HSD156GSY-A10 Preliminary specification			Page No.	13 / 24
Document No.	DC110-003070			Revision	1.0
14	RxCLK-	Negative LVDS differential clock inputs	34	GND	Ground
15	RxCLK+	Positive LVDS differential clock inputs	35	LED_PWM	System PWM Logic Input Level
16	GND	Ground	36	LED_EN	LED enable input level
17	Rxin3-	Negative LVDS differential clock inputs	37	NC	No Connection
18	Rxin3+	Positive LVDS differential clock inputs	38	LED_VCC	Power Supply for LED Driver 12V DC
19	GND	Ground	39	LED_VCC	Power Supply for LED Driver 12V DC
20	Lxin0-	Negative LVDS differential data inputs	40	LED_VCC	Power Supply for LED Driver 12V DC

INTERFACE PIN CONNECTION

CN1 : CN1 : BJD-101049-205050 or compatible connector

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	14 / 24
Document No.	DC110-003070	Revision	1.0

6.0 ELECTRICAL CHARACTERISTICS

6.1 TFT LCD Module

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Supply Voltage	VCC	4.7	5.0	5.5	V	
Current of power supply	IDD	--	300	--	mA	V _{CC} =5.0V、L255 pattern
VDD Power	PDD		1.5	5	W	V _{CC} =5.0V、L255 pattern
Inrush current	I _{RUSH}	-	-	3.0	A	Note

Note : Inrush current test circuit and rising time setting (power on)

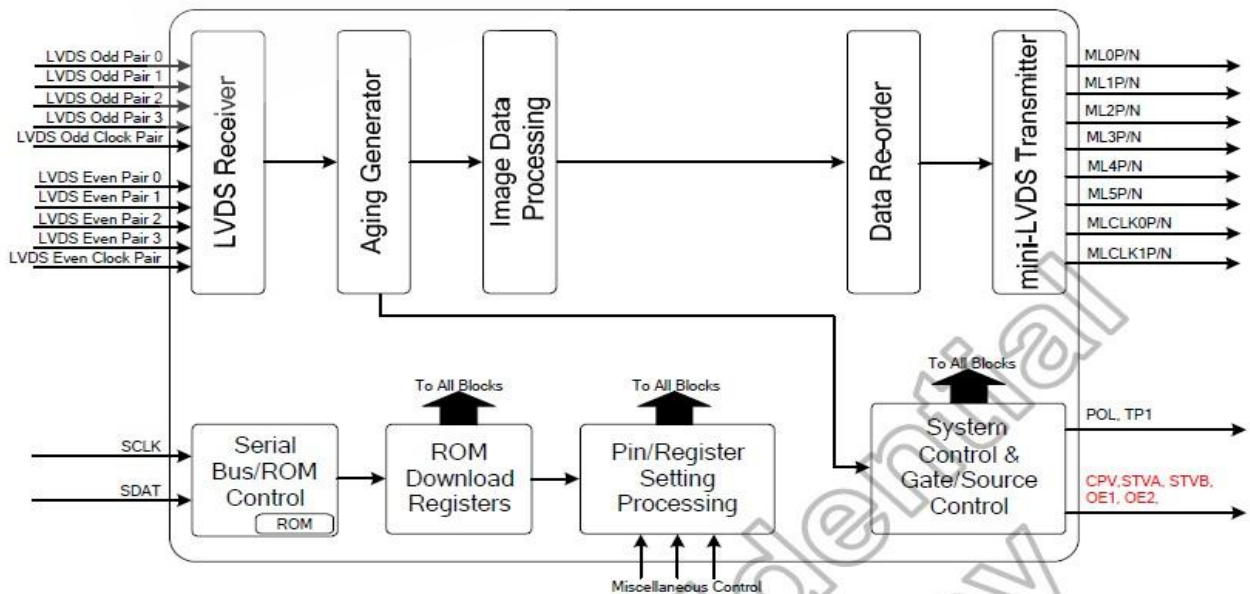
Switching Characteristics for LVDS Receiver

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Differential Input High Threshold	V _{th}	—	—	100	mV	V _{CM} =1.2V
Differential Input Low Threshold	V _{tl}	-100	—	—	mV	
Input Current Differential input Voltage	I _{IN}	-10	—	+10	uA	
	V _{ID}	0.2	—	0.6	V	
Common Mode Voltage Offset	V _{CM}	(V _{ID} /2)	1.2	2.25-(V _{ID} /2)	V	

Bit LVDS input

6.2 LVDS Block Diagram

Block Diagram



Document Title	HSD156GSY-A10 Preliminary specification	Page No.	15 / 24
Document No.	DC110-003070	Revision	1.0

LVDS input data mapping

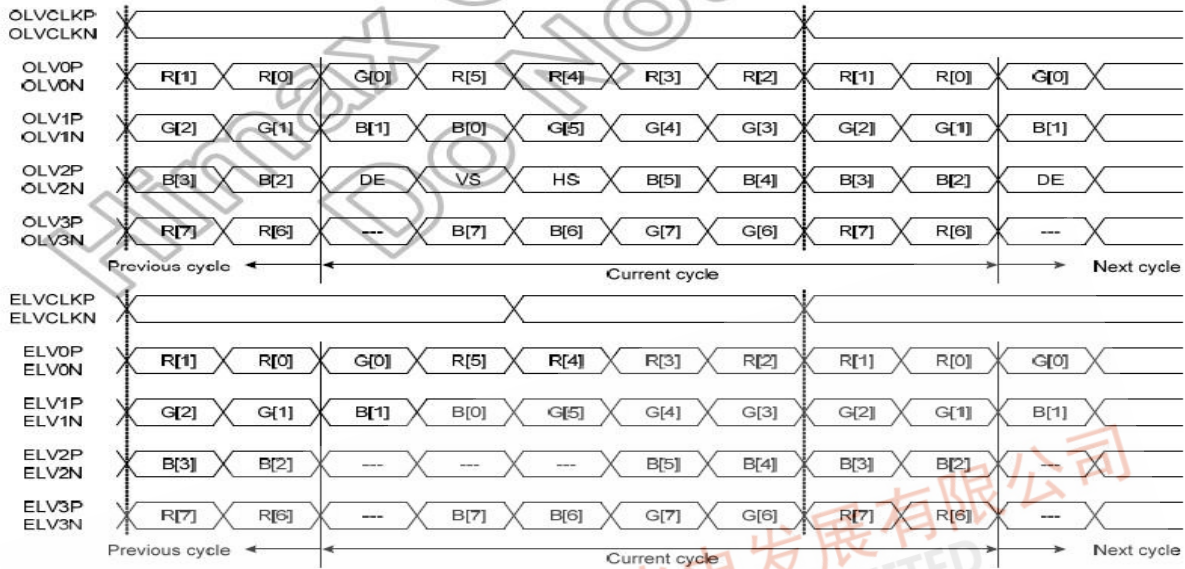


Figure 6.2: LVDS input data mapping (VESA format)

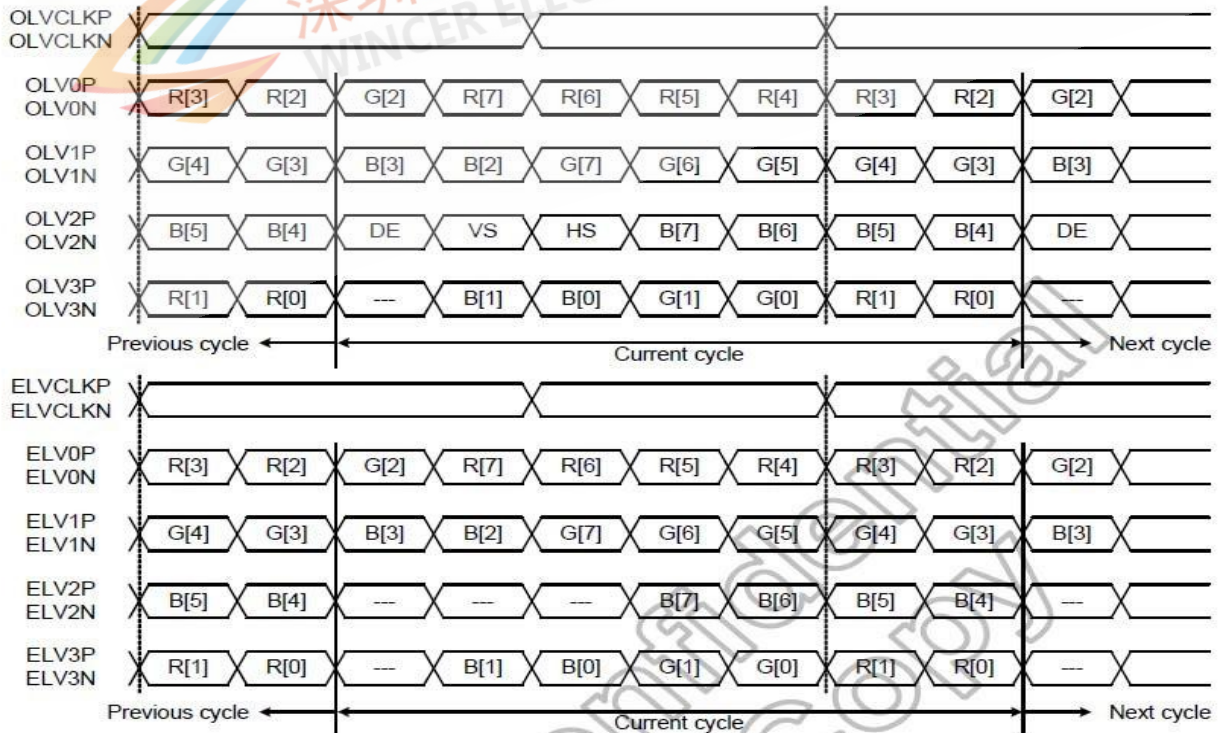


Figure 6.3: LVDS input data mapping (JEIDA format)

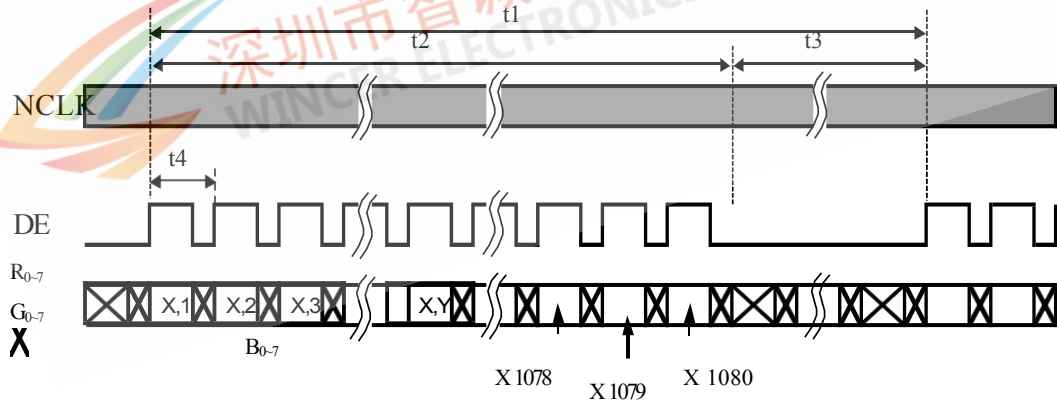
Document Title	HSD156GSY-A10 Preliminary specification	Page No.	16 / 24
Document No.	DC110-003070	Revision	1.0

6.3 Interface Timing (DE mode)

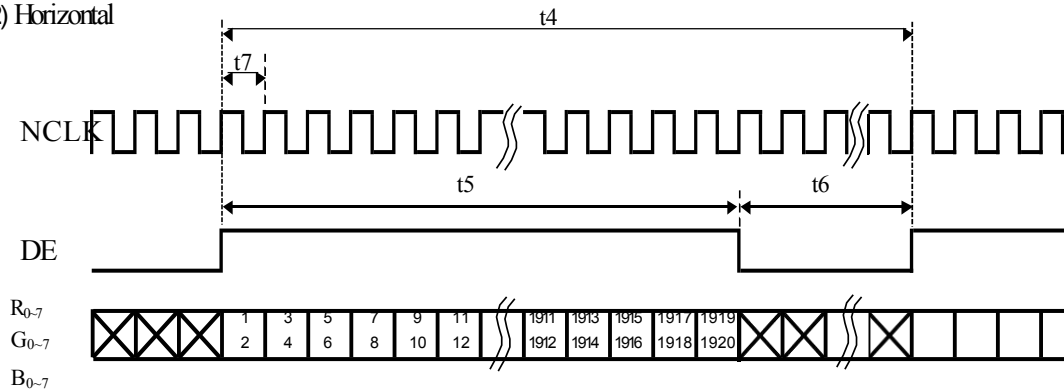
Item	Symbol	Min.	Typ.	Max.	Unit
Frame Rate	--	58	60	62	Hz
Frame Period	t1	1085	1124	1168	line
Vertical Display Time	t2	1080	1080	1080	line
Vertical Blanking Time	t3	5	44	88	line
1 Line Scanning Time	t4	1050	1080	1110	clock
Horizontal Display Time	t5	960	960	960	clock
Horizontal Blanking Time	t6	90	120	150	clock
Clock Rate	t7	66	72.8	80.5	MHz

Timing Diagram of Interface Signal (DE mode)

(1) Vertical

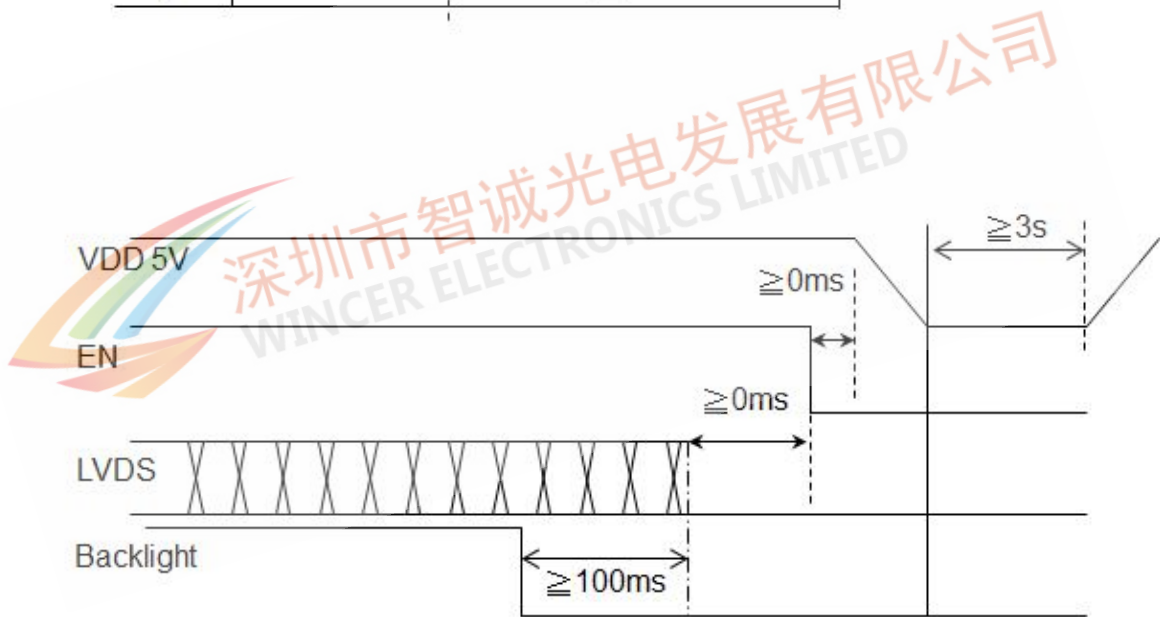
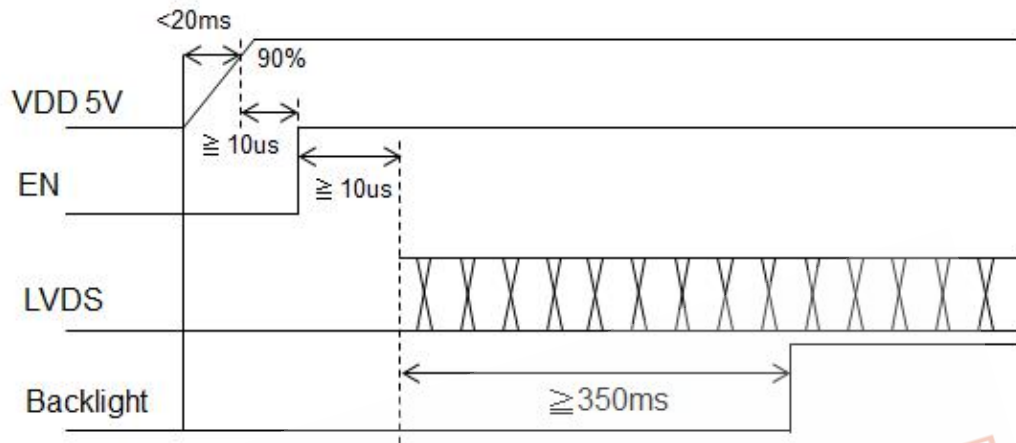


(2) Horizontal



Document Title	HSD156GSY-A10 Preliminary specification	Page No.	17 / 24
Document No.	DC110-003070	Revision	1.0

6.4 Power On / Off
Sequence Power On/off sequence



深圳市智诚光电发展有限公司
 WINCER ELECTRONICS LIMITED

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	18 / 24
Document No.	DC110-003070	Revision	1.0

6.5 Backlight Unit

Parameter	Symbol	Min	Typ	Max	Units	Condition
LED Current	I_L	--	120	--	mA	Ta=25°C
LED Voltage	V_L	25.2	27.0	28.8	Volt	Ta=25°C
LED Life-Time	N/A	--	30000	--	Hour	Ta=25 I _F =120mA Note (2)

- (1) LED life time (Hr) can be defined as the time in which it continues to operate under the condition: Ta=25±3 °C, typical IL value indicated in the above table until the brightness becomes less than 50%.
- (2) The “LED life time” is defined as the module brightness decrease to 50% original brightness at Ta=25°C and IL=120mA. The LED lifetime could be decreased if operating IL is larger than 120mA. The constant current driving method is suggested.
- (3) LED Light Bar Circuit (9S6P)

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	19 / 24
Document No.	DC110-003070	Revision	1.0

7.0 Reliability test items

No.	Item	Conditions	Remark
1	High Temperature Storage	Ta = +60°C, 1000hrs	
2	Low Temperature Storage	Ta = -20°C, 1000hrs	
3	High Temperature Operation	Ta = +50°C, 1000hrs	
4	Low Temperature Operation	Ta = -10°C, 1000hrs	
5	High Temperature and High Humidity (operation)	Ta = +60°C, 90%RH, 500hrs	
6	Thermal Cycling Test (non operation)	-20°C(30min) → +60°C(30min), 300 cycles	
7	Electrostatic Discharge	Contact = ± 8 kV, class B; (R=330Ω,C=150pF); Air = ± 15 kV, class B; (R=330Ω,C=150pF); 1 time for each point.	
8	Vibration	1.Random: 1.04G, 10~500Hz, XYZ, 30min/each direction 2.Sine: Freq. Range: 8~33.3Hz, Stoke: 1.3mmhz Sweep: 2.9G, 33.3~400 X/Z: 2hrs, Y:4hrs	
9	Shock	Half-Sine, 100G, 6ms, ±XYZ, 1time	
10	Vibration (with carton)	Random: 0.015G ² /Hz, 5~200Hz -6dB/Octave, 200~400Hz XYZ 各方向 2hrs	
11	Drop (with carton)	Drop height condition, basis on the product weight and follow QB100-0027 1 corner, 3 edges, 6 surfaces	

Note 1 : There is no display function NG issue occurred, all the cosmetic specification is judged before the reliability stress.

Note 2 : The test result shall be evaluated after the sample has been left at room temperature and humidity for 2 hours without load.

No condensation shall be accepted. The sample shall be free from defects:

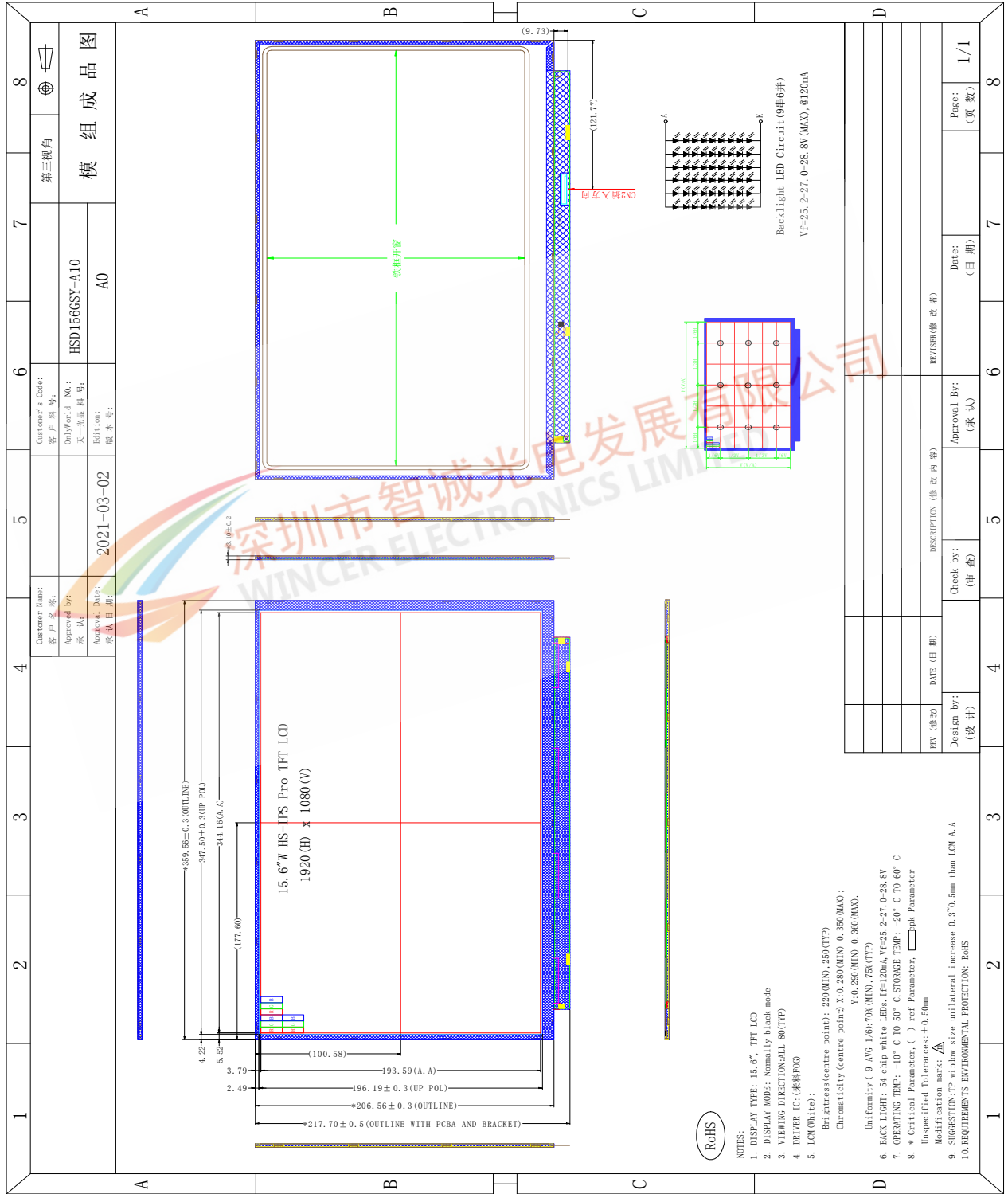
(Air bubble in the LCD、Seal leak、Non-display、Missing segments、Glass crack).

Note 3 : The test condition definition panel's surface temperature.

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	20 / 24
Document No.	DC110-003070	Revision	1.0

8.0 OUTLINE DIMENSION

Unit : mm



Document Title	HSD156GSY-A10 Preliminary specification	Page No.	21 / 24
Document No.	DC110-003070	Revision	1.0

9.0 LOT MARK

Lot Mark

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----

Code 1,2,3,4,5,6: HannStar internal flow control code.

Code 7: production location.

Code 8: production year.

Code 9: production month.

Code 10,11,12,13,14,15: serial number.

Note (1) Production Year: Code 8 is defined by the last number of the year, for example

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Mark	6	7	8	9	0	1	2	3	4	5

Note (2) Production Month

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct	Nov.	Dec.
Mark	1	2	3	4	5	6	7	8	9	A	B	C

Detail of Lot Mark

- (1) Below label is attached on the backside of the LCD module. See Section 8.0: Outline Dimension.
- (2) The detail of Lot Mark is attached as below.
- (3) This is subject to change without prior notice.

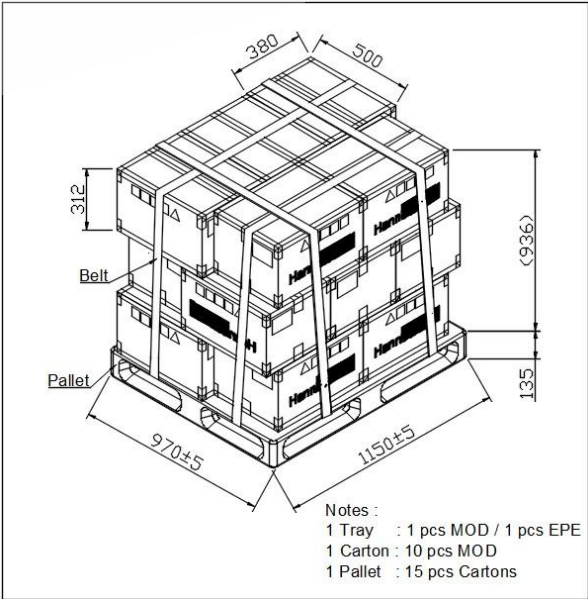
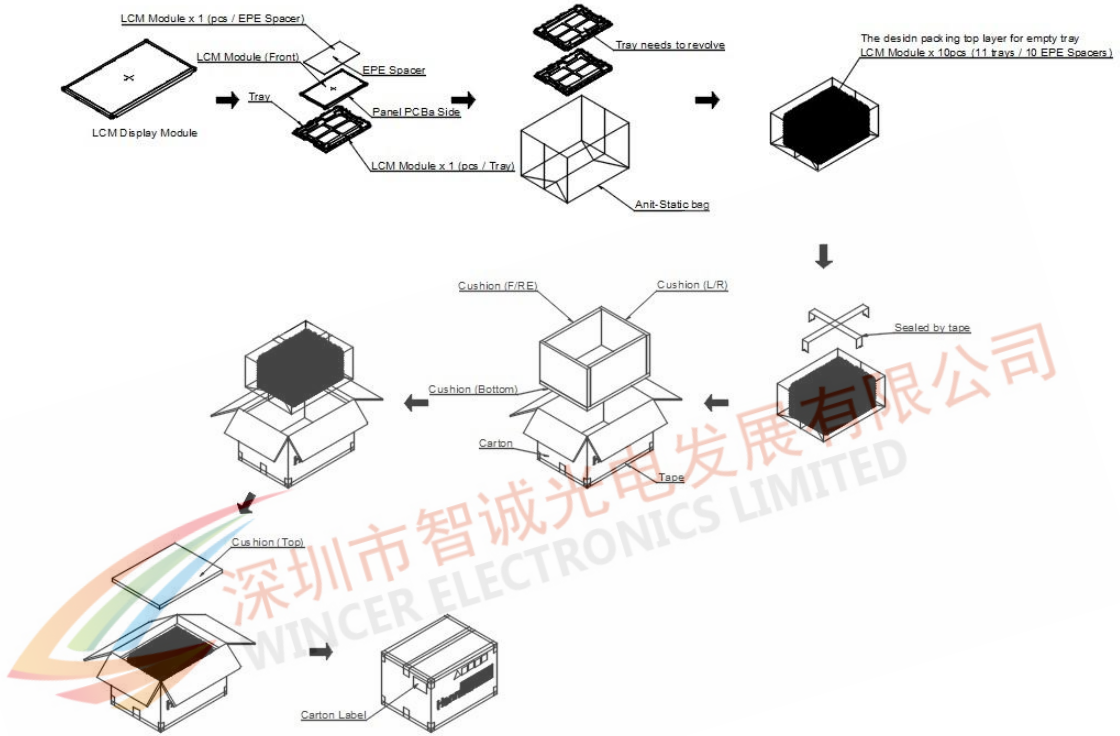
Document Title	HSD156GSY-A10 Preliminary specification	Page No.	24 / 24
Document No.	DC110-003070	Revision	1.0

10.0 PACKAGE SPECIFICATION

10.1 Packing form

LCM Model	Qty. in the Box	Inner Box Size(mm)	Notice
HSD156GSY-A10	30pcs/Box	460*440*270mm	--

10.2 Packing assembly drawings



Document Title	HSD156GSY-A10 Preliminary specification	Page No.	24 / 24
Document No.	DC110-003070	Revision	1.0

11.0 GENERAL PRECAUTION

Use Restriction

This product is not authorized for use in life supporting systems, aircraft navigation control systems, military systems and any other application where performance failure could be life-threatening or otherwise catastrophic.

Disassembling or Modification

Do not disassemble or modify the module. It may damage sensitive parts inside LCD module, and may cause scratches or dust on the display. HannStar does not warrant the module, if customers disassemble or modify the module.

Breakage of LCD Panel

If LCD panel is broken and liquid crystal spills out, do not ingest or inhale liquid crystal, and do not contact liquid crystal with skin.

If liquid crystal contacts mouth or eyes, rinse out with water immediately.

If liquid crystal contacts skin or cloths, wash it off immediately with alcohol and rinse thoroughly with water.

Handle carefully with chips of glass that may cause injury, when the glass is broken.

Electric Shock

Disconnect power supply before handling LCD module.

Do not pull or fold the LED cable.

Do not touch the parts inside LCD modules and the fluorescent LED's connector or cables in order to prevent electric shock.

Absolute Maximum Ratings and Power Protection Circuit

Do not exceed the absolute maximum rating values, such as the supply voltage variation, input voltage variation, variation in parts' parameters, environmental temperature, etc., otherwise LCD module may be damaged.

Please do not leave LCD module in the environment of high humidity and high temperature for a long time.

It's recommended to employ protection circuit for power supply.

Operation

Do not touch, push or rub the polarizer with anything harder than HB pencil lead.

Use fingerstalls of soft gloves in order to keep clean display quality, when persons handle the LCD module for incoming inspection or assembly.

When the surface is dusty, please wipe gently with absorbent cotton or other soft material.

Document Title	HSD156GSY-A10 Preliminary specification	Page No.	24 / 24
Document No.	DC110-003070	Revision	1.0

Wipe off saliva or water drops as soon as possible. If saliva or water drops contact with polarizer for a long time, they may causes deformation or color fading.

When cleaning the adhesives, please use absorbent cotton wetted with a little petroleum benzine or other adequate solvent.

Mechanism

Please mount LCD module by using mounting holes arranged in four corners tightly.

Static Electricity

Protection film must remove very slowly from the surface of LCD module to prevent from electrostatic occurrence.

Because LCD module use CMOS-IC on circuit board and TFT-LCD panel, it is very weak to electrostatic discharge. Please be careful with electrostatic discharge. Persons who handle the module should be grounded through adequate methods.

Strong Light Exposure

The module shall not be exposed under strong light such as direct sunlight. Otherwise, display characteristics may be changed.

Disposal

When disposing LCD module, obey the local environmental regulations.

