



**RAYSTAR**

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## RFC570E-AIW-DNS

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### SPECIFICATION

CUSTOMER:

<b>APPROVED BY</b>	
<b>PCB VERSION</b>	
<b>DATE</b>	

FOR CUSTOMER USE ONLY

<b>SALES BY</b>	<b>APPROVED BY</b>	<b>CHECKED BY</b>	<b>PREPARED BY</b>

Release DATE:

TFT Display Inspection Specification: <https://www.raystar-optronics.com/download/products.htm>

Precaution in use of TFT module: <https://www.raystar-optronics.com/download/declaration.htm>

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## Revision History

VERSION	DATE	REVISED PAGE NO.	Note
0	2015/12/08		First issue
A	2016/01/20		Add Resistance Touch Panel General Specification.
B	2016/01/21		Modify Static electricity test
C	2016/08/11		Modify Vibration test
D	2016/11/17		Modify Summary
E	2019/01/16		Modify length of cable. Add Uniformity

# Contents

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# 1.Module Classification Information

<b>R</b>	<b>F</b>	<b>C</b>	<b>57</b>	<b>0E</b>	<b>-</b>	<b>A</b>	<b>I</b>	<b>W</b>	<b>-</b>	<b>D</b>	<b>N</b>	<b>S</b>
1	2	3	4	5	-	6	7	8	-	9	10	11

Item	Description	
1	R : Raystar Optronics Inc.	
2	Display Type : F→TFT Type, J→ Custom TFT	
3	Solution: A: 128x160    B:320x234    C:320x240    D:480x234    E:480x272 F:800x480    G:640x480    H:1024x600    I:320x480    J:240x320 K:1280x800    L:240x400    M:1024x768    N:128x128    O:480x800 P:640x320    Q:800x600    S:480x128    T:800x320	
4	Display Size : 5.7" TFT	
5	Version Code.	
6	Model Type: A : TFT LCD E : TFT+FR+CONTROL BOARD J : TFT+FR+A/D BOARD N : TFT+FR+A/D BOARD+CONTROL BOARD S : TFT+FR+POWER BOARD (DC TO DC) 1 : TFT+CONTROL BOARD	6 : TFT+FR H : TFT+D/V BOARD I : TFT+FR+D/V BOARD B : TFT+POWER BD
7	Polarizer Type, Temperature range, View direction	I→Transmissive, W. T, 6:00 ; C→Transmissive, N. T, 6:00 L→Transmissive, W.T,12:00 ; F→Transmissive, N.T,12:00 Y→Transmissive,W.T, IPS TFT ; A→Transmissive, N.T, IPS TFT Z→Transmissive, W.T, O-TFT R→Transmissive, Super W.T, O-TFT N→Transmissive, Super W.T, 6:00; Q→Transmissive, Super W.T, 12:00 V→Transmissive, Super W.T, VA TFT
8	Backlight	W : LED, White                      H : LED, High Light White F : CCFL, White
9	Driver Method	D: Digital    A: Analog    L : LVDS    M:MIPI
10	Interface	N : without control board    A : 8Bit    B : 16Bit S:SPI Interface    R: RS232    U:USB    I: I2C
11	TS	N : Without TS    S : resistive touch panel C : capacitive touch panel capacitive touch panel (G-F-F) G : capacitive touch panel(G-G)

## 2.Summary

TFT 5.7" is a TN transmissive type color active matrix TFT liquid crystal display that use amorphous silicon TFT as switching devices. This module is a composed of a TFT\_LCD module, It is usually designed for industrial application and this module follows RoHs,

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### 3.General Specifications

- Size: 5.7 inch
- Dot Matrix: 320 x RGBx240(TFT) dots
- Module dimension: 141.12(W) x 101.55(H) x 8.0(D)(MAX) mm
- Active area: 115.2 x 86.40 mm
- Dot pitch: 0.12 x 0.36 mm
- LCD type: TFT, Normally White, Transmissive
- View Direction: 12 o'clock
- Gray Scale Inversion Direction: 6 o'clock
- Aspect Ratio: 4:3
- Backlight Type: LED, Normally White
- With /Without TP: With RTP
- Surface: Anti-Glare

\*Color tone slight changed by temperature and driving voltage.

## 4.Interface

### 4.1. LCM PIN Definition

Pin	Symbol	Function	Remark
1	IF1	Input data format control	Note1
2	IF2	Input data format control	Note1
3	POL	Polarity Signal connect to VCOM driving circuit.	Note3
4	RESET	Hardware reset	
5	SPENA	Chip select	Note2
6	SPCL	Serial Clock	Note2
7	SPDA	Serial Data	
8	B0	Blue Data bit	
9	B1	Blue Data bit	
10	B2	Blue Data bit	
11	B3	Blue Data bit	
12	B4	Blue Data bit	
13	B5	Blue Data bit	
14	B6	Blue Data bit	
15	B7	Blue Data bit	
16	G0	Green Data bit	
17	G1	Green Data bit	
18	G2	Green Data bit	
19	G3	Green Data bit	
20	G4	Green Data bit	
21	G5	Green Data bit	
22	G6	Green Data bit	
23	G7	Green Data bit	
24	R0	Red Data bit	
25	R1	Red Data bit	
26	R2	Red Data bit	
27	R3	Red Data bit	
28	R4	Red Data bit	
29	R5	Red Data bit	
30	R6	Red Data bit	
31	R7	Red Data bit	
32	Hsync	Horizontal synchronous signal	
33	Vsync	Vertical synchronous signal	
34	Data CLK	Dot data clock	
35	AVDD(analog)	Analog power: 4.5V~5.5V	
36	AVDD(analog)	Analog power: 4.5V~5.5V	
37	VDD(Digital)	Digital power: 3V~3.6V	
38	VDD(Digital)	Digital power: 3V~3.6V	
39	NPC	NTSC/PAL mode Auto detection result H:NTSC/L:PAL	
40	VGL	Gate off power	
41	VGL	Gate off power	
42	UD	Up/down selection	

43	VGH	Gate on power	
44	LRC	Shift direction of device internal shift register control.	
45	GND	System ground pin of the IC. Connect to system ground.	
46	VCOM	VCOM driving input	Note3
47	VCOM	VCOM driving input	
48	ENB	Signal to settle the horizontal display position	Note4
49	GND	System ground pin of the IC. Connect to system ground.	
50	GND	System ground pin of the IC. Connect to system ground.	

Note: 1.Control the input data format.

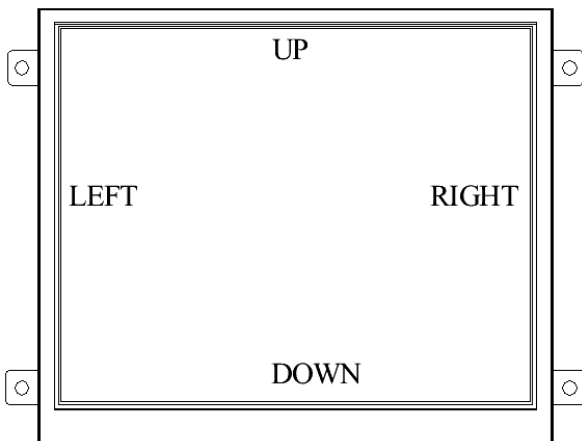
IF2,IF1	Input data format
L,L(default)	Serial RGB
L,H	Parallel RGB
H,L	CCIR601
H,H	CCIR656

2. Pin 5 · Pin 6 usually pull high.

3. The polarity of VCOM (Pin 46,47) should be generated from POL (Pin 3).

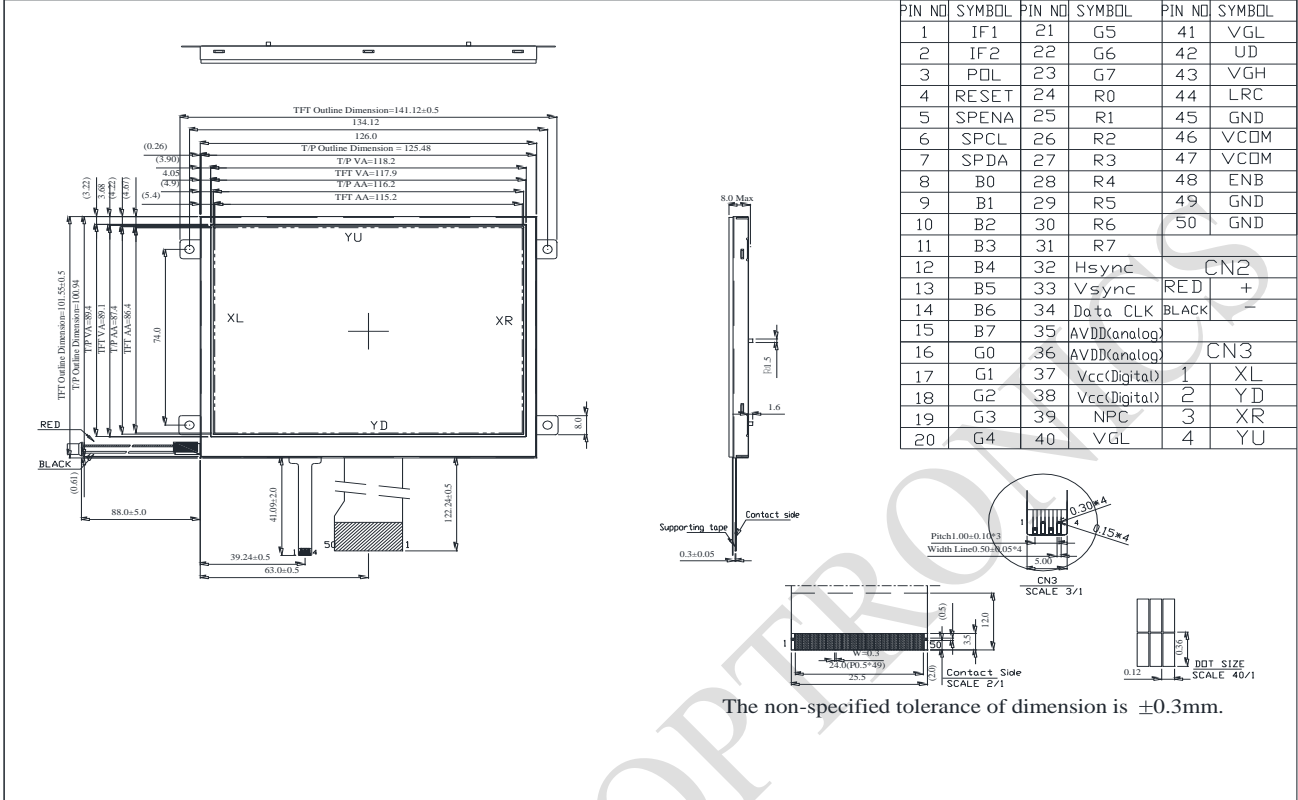
4. For digital RGB input data format, both SYNC mode and DE+SYNC mode are supported. If ENB signal is fixed low, SYNC mode is used. Otherwise, DE+SYNC mode is used.

Setting of scan control input		Scanning direction
U/D	L/R	
L	H	Up to down, left to right
H	L	Down to up, right to left
L	L	Up to down, right to left
H	H	Down to up, left to right



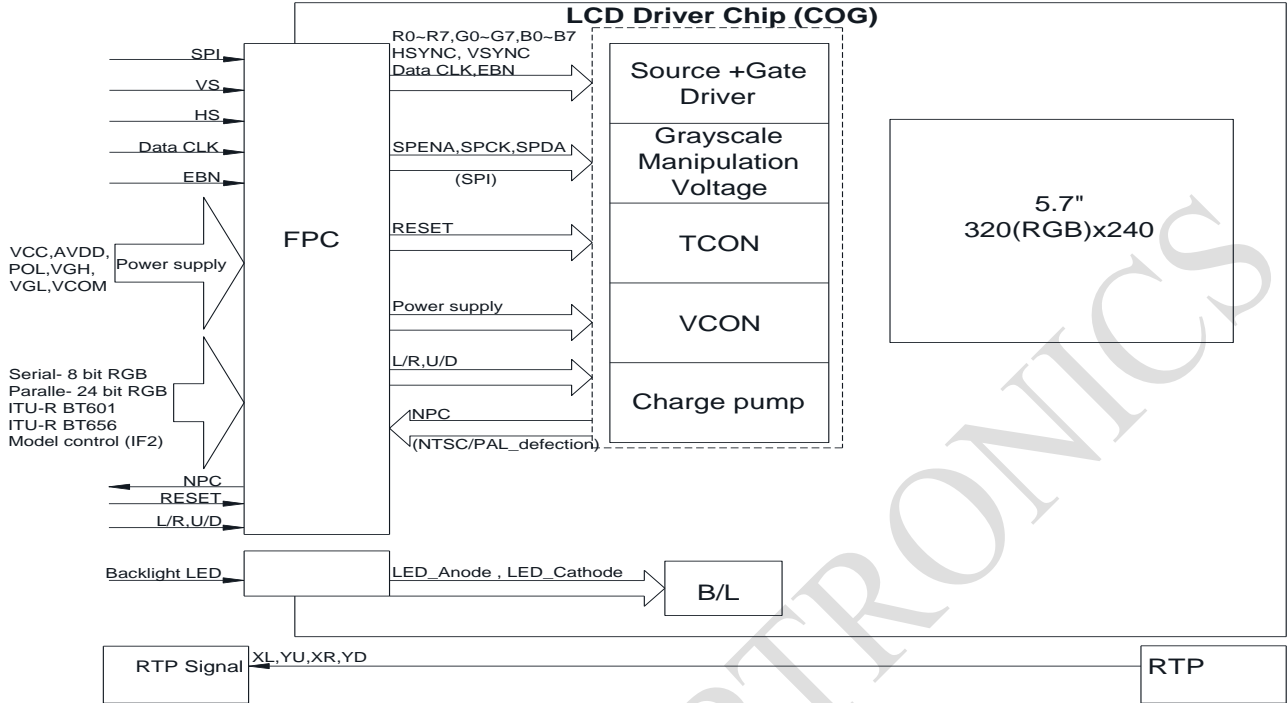


# 5. Contour Drawing



The non-specified tolerance of dimension is  $\pm 0.3\text{mm}$ .

## 6. Block Diagram



## 7. Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	°C
Storage Temperature	TST	-30	—	+80	°C

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

- Temp.  $\leq 60^{\circ}\text{C}$ , 90% RH MAX. Temp.  $> 60^{\circ}\text{C}$ , Absolute humidity shall be less than 90% RH at  $60^{\circ}\text{C}$

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## 8. Electrical Characteristics

### 8.1. Operating conditions:

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	VCC	—	3.0	3.3	3.6	V
Input High Volt.	V <sub>IH</sub>	—	0.7 V <sub>CC</sub>	—	V <sub>CC</sub>	V
Input Low Volt.	V <sub>IL</sub>	—	0	—	0.3 V <sub>CC</sub>	V
LCD Driving Supply Voltage	V <sub>GH</sub> *1	Ta=25°C		15		V *3
	V <sub>GL</sub> *2			-10		
	V <sub>comH</sub>		2.5		5.5	
	V <sub>comL</sub>		-2.0		0	
Supply Current	I <sub>VCC</sub>	VCC=3.3V	—	5	8	mA

Notes:

\*1) V<sub>GH</sub> is TFT Gate on operating voltage

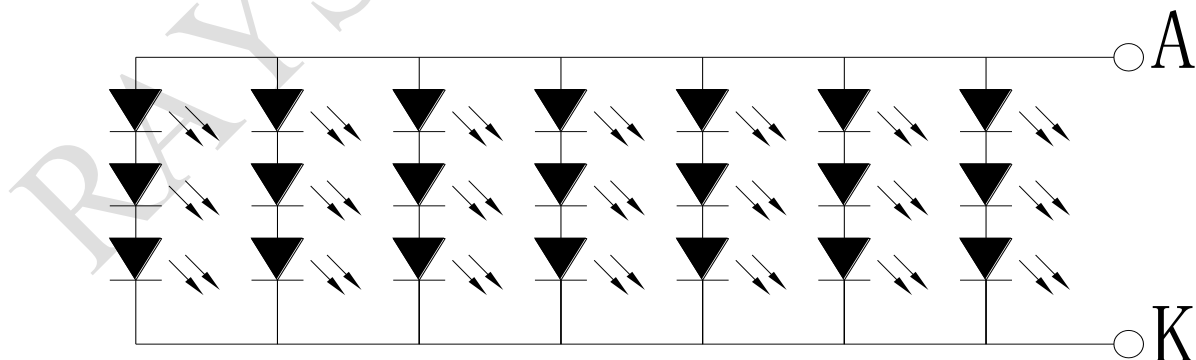
\*2) V<sub>GL</sub> is TFT Gate off operating voltage , V<sub>GL</sub> signal must be fluctuates with same phase as V<sub>com</sub> when Storage on Gate structure.

\*3) V<sub>com</sub> must be adjusted to optimize display quality\_ Crosstalk , Contrast Ratio and etc.

### 8.2. LED driving conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
LED current		-	140	-	mA	
Power Consumption		1260		1470	mW	
LED voltage	V <sub>BL+</sub>	9.0		10.5	V	Note 1
LED Life Time			50,000		Hr	Note 2,3,4

Note 1 : There are 1 Groups LED



Note 2 : Ta = 25 °C

Note 3 : Brightness to be decreased to 50% of the initial value

Note 4 : The single LED lamp case.

## 9.DC CHARATERISTICS

Parameter	Symbol	Rating			Unit	Condition
		Min	Typ	Max		
Low level input voltage	$V_{IL}$	0	-	0.3VCC	V	
High level input voltage	$V_{IH}$	0.7VCC	-	VCC	V	

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## 10.AC CHARACTERISTICS

### 10.1. CCIR601/656 Interface

#### Input signal characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
CLK period	Tosc	-	37	-	ns
Data setup time	Tsu	12	-	-	ns
Data hold time	T <sub>Ho</sub>	12	-	-	ns

#### Hardware reset timing

Parameter	Symbol	Min.	Typ	Max	Unit
Reset low pulse width	T <sub>RSB</sub>	10	-	-	μs

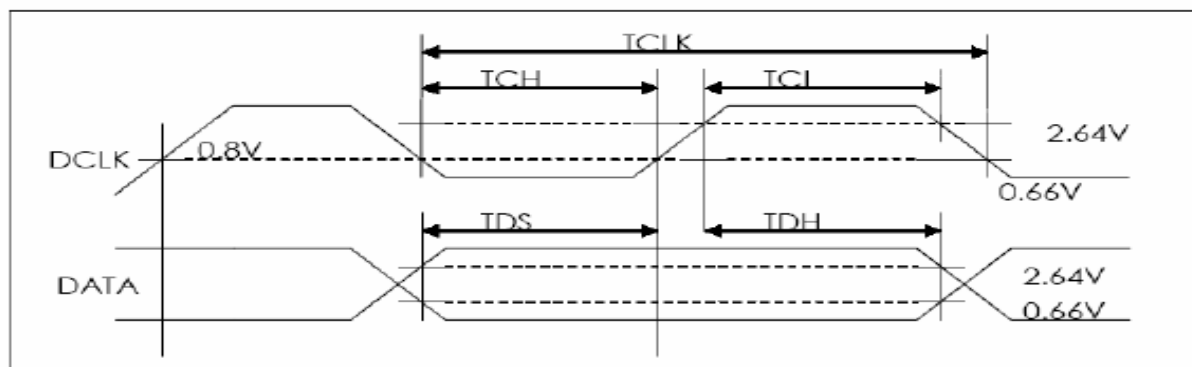
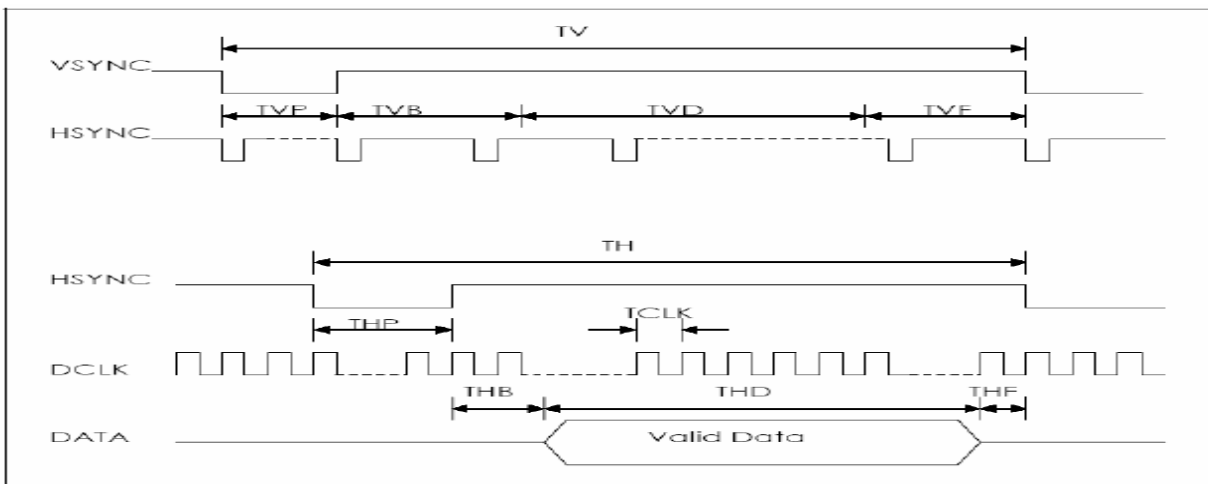
#### Output signal characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	
Rising time	T <sub>r</sub>	-	-	10	ns	
Falling time	T <sub>f</sub>	-	-	10	ns	
Internal STH setup time	T <sub>SUS</sub>	12	-	-	ns	
Internal STH hold time	T <sub>HDS</sub>	12	-	-	ns	
Internal data setup time	T <sub>SUD</sub>	60	-	-	ns	
Internal data hold time	T <sub>HDD</sub>	40	-	-	ns	
OE <sub>H</sub> pulse width	T <sub>OE<sub>H</sub></sub>	-	1248	-	ns	
OE <sub>V</sub> pulse width	T <sub>OE<sub>V</sub></sub>	-	4992	-	ns	
CKV pulse width	T <sub>CKV</sub>	-	3744	-	ns	
Hsync-DEH time	T <sub>1</sub>	-	4368	-	ns	
Hsync-CKV time	T <sub>2</sub>	-	2496	-	ns	
Hsync-OE <sub>V</sub> time	T <sub>3</sub>	-	624	-	ns	
Vsync-setup time	T <sub>SUV</sub>		1872	-	ns	
Vsync-pulse time	T <sub>STV</sub>		1	-	T <sub>H</sub>	
Vsync-STV time	NTSC	T <sub>V<sub>S1</sub></sub>	-	19	-	T <sub>H</sub>
	PAL	T <sub>V<sub>S1</sub></sub>	-	27	-	T <sub>H</sub>
OE <sub>H</sub> -STV time	T <sub>HE</sub>	-	2	-	T <sub>H</sub>	
Output settling time	T <sub>OES</sub>	-	12	20	μs	

## 10.2. 24-bits parallel RGB Interface AC Timing Characteristics

Signal	Item	Symbol	Min.	Typ.	Max.	Unit	
Dclk	Frequency	Dclk	-	6.4	-	MHZ	
	High time	Tch	-	78	-	ns	
	Low time	Tcl	-	78	-	ns	
Data	Setup time	Tds	12	-	-	ns	
	Hold time	Tdh	12	-	-	ns	
Hsync	Period	TH	-	408	-	DCLK	
	Pulse Width	Thp	-	30	-	DCLK	
	Back-Porch	Thb	-	38	-	DCLK	
	Display Period	Thd	-	320	-	DCLK	
	Front-Porch	Thf	-	20	-	DCLK	
Vsync	Period	NTSC	-	262.5	-	DCLK	
		PAL		312.5			
	Pulse Width		Tvp	1	3	5	TH
	Back-Porch	NTSC	-	15	-	TH	
		PAL		23			
	Display Period	Tvd	-	240	-	TH	
	Front-Porch	NTSC	-	4.5	-	TH	
		PAL		46.5			

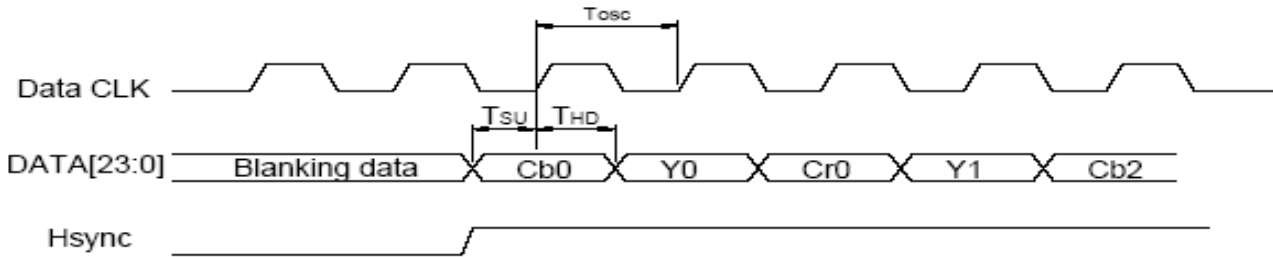
### AC Timing Diagrams



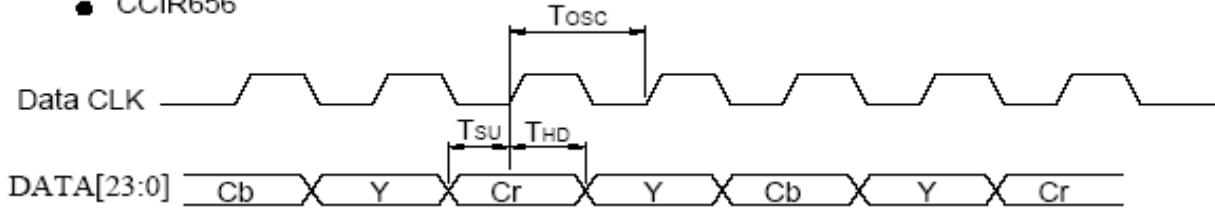
# 11. Waveform

## 11.1. Timing Controller Timing Chart Clock and Data waveform

- CCIR601( HS\_POL="L" in Register R2)

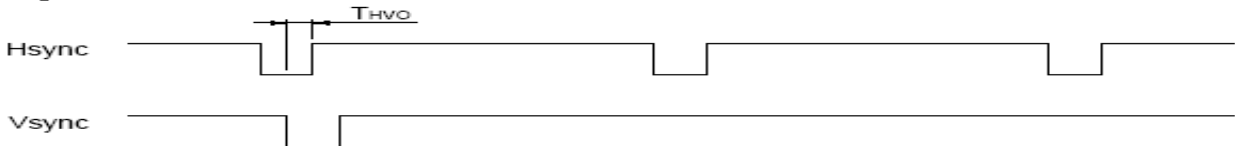


- CCIR656

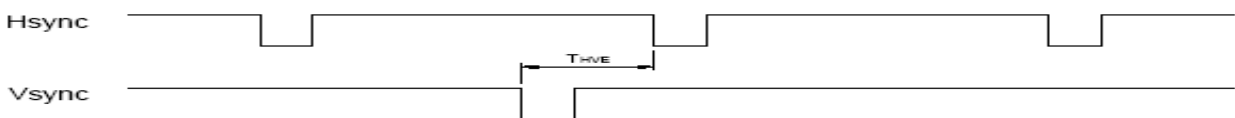


## 11.2. Digital / Analog RGB timing waveform Hsync and Vsync timing

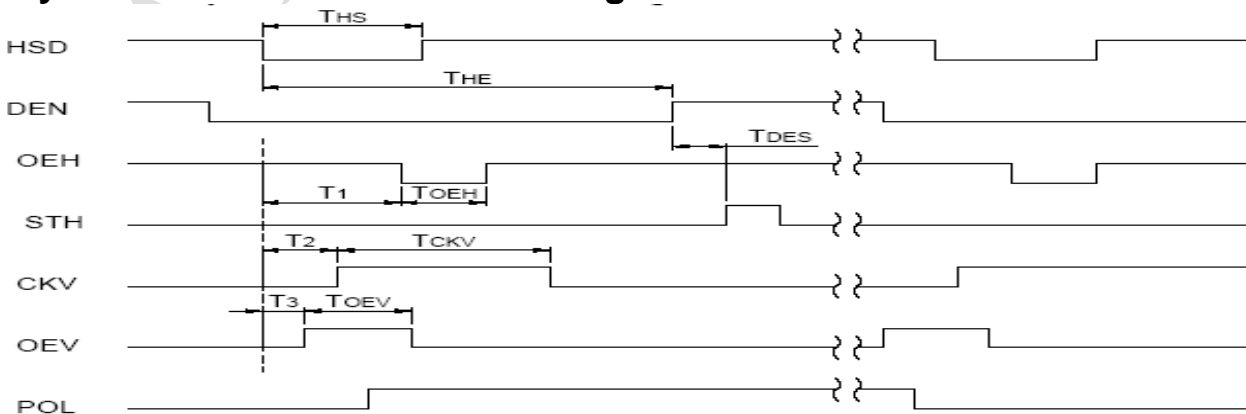
- Odd field



- Even field

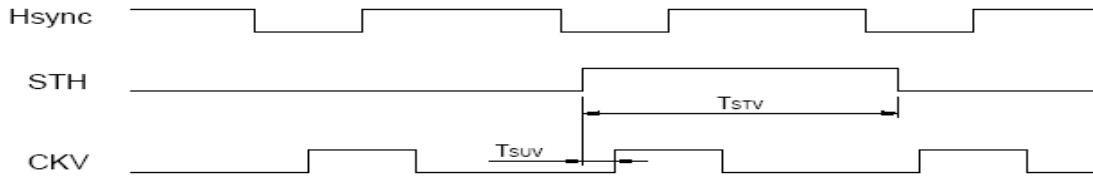


## Hsync and horizontal control timing waveform

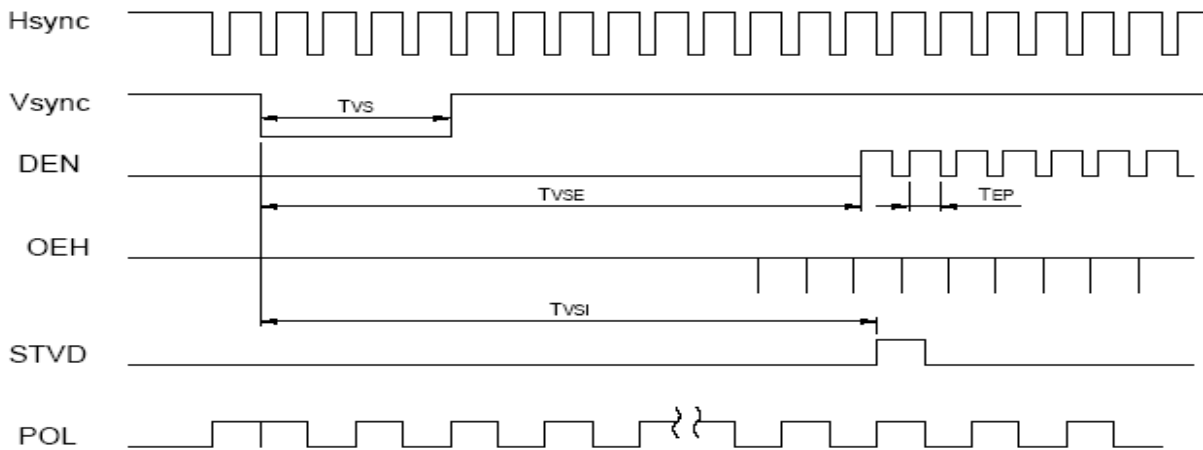




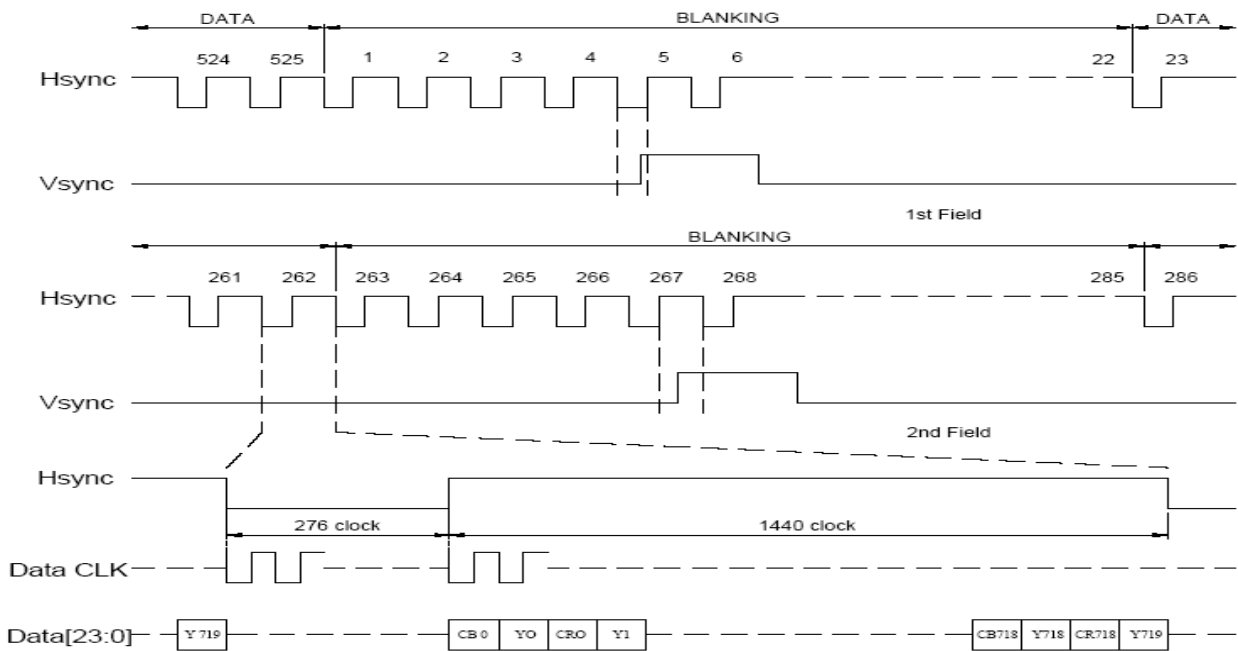
### Hsync and vertical shift clock timing waveform



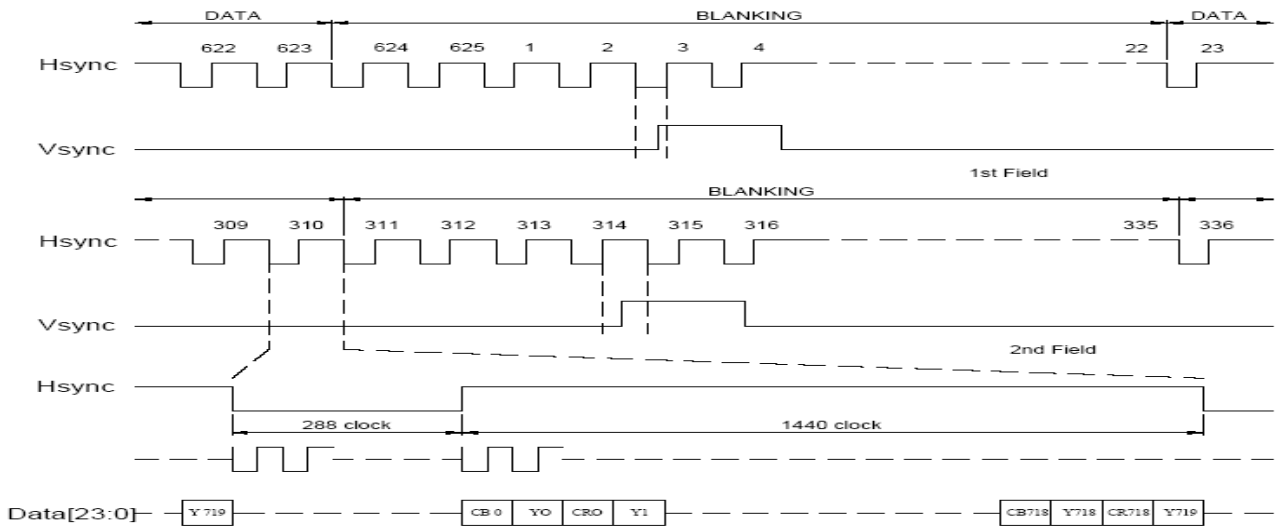
### Hsync and vertical shift clock timing waveform



### 11.3. CCIR601 timing waveform (VS\_POL="H" , HS\_POL="L" in Register R2)

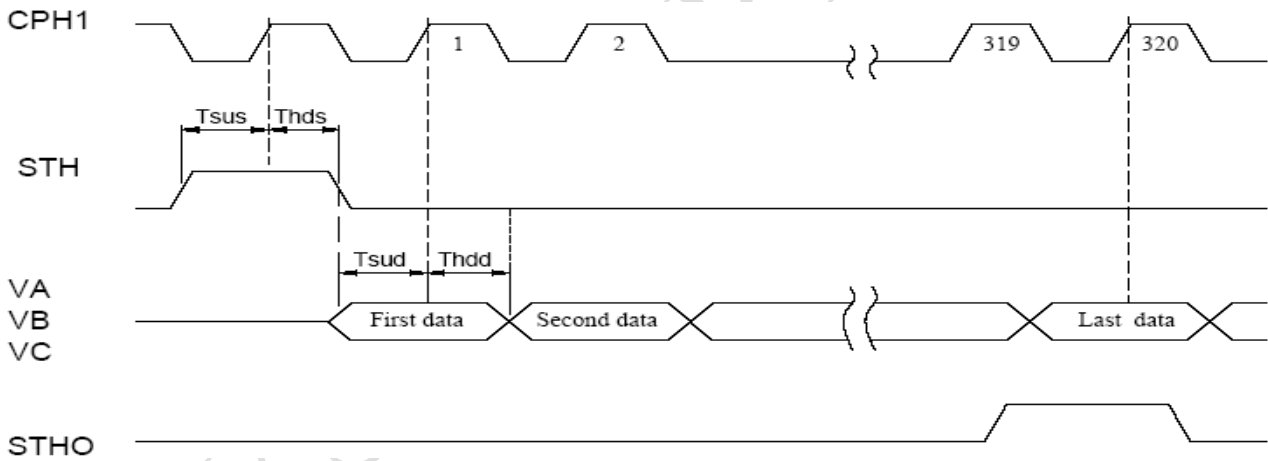


ITU-BT.601 NTSC Input Timing

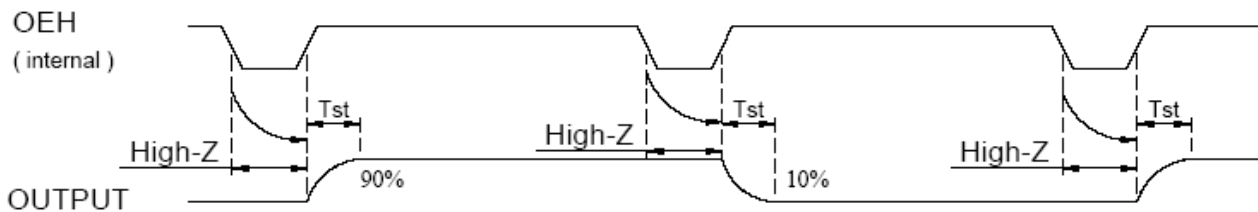


ITU-BT.601 PAL Input Timing

### 11.4. Source Driver Timing Chart Clock and Start Pulse timing waveform



### OEH and Data Output timing waveform



### 11.5. Analog video signal characteristics

PARAMETER	Symbol	Min.	Typ.	Max.	Unit
Video signal amplitude (VA, VB, VC)	$V_{IAC}$	-	3.81	-	V
	$V_{IDC}$	-	2.385	-	V

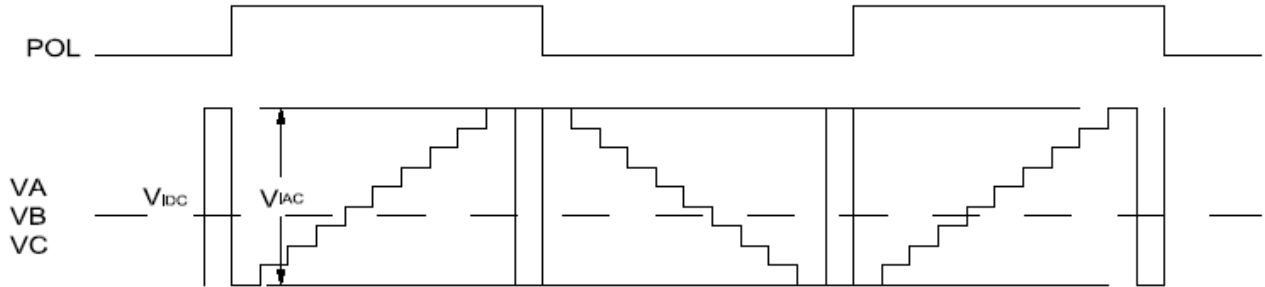
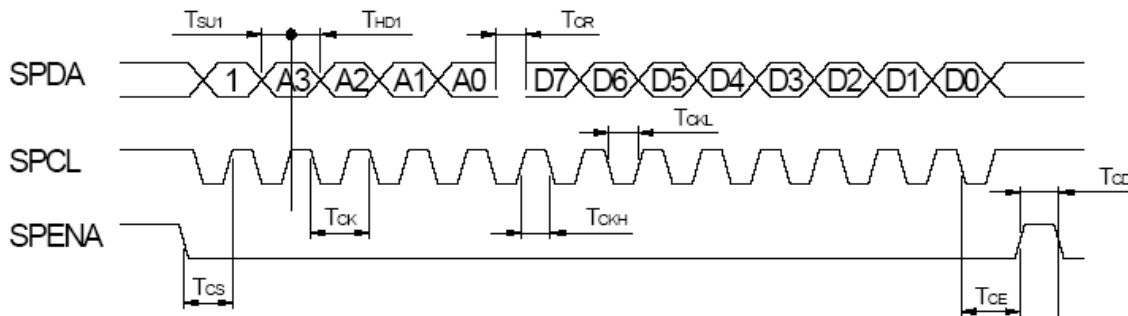


Fig. 4-(a) Horizontal timing

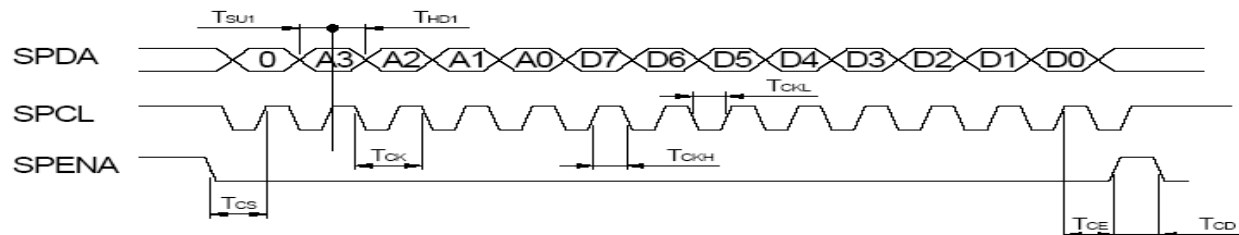
### 11.6. SPI timing characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
SPCL period	$T_{CK}$	60	-	-	ns
SPCL high width	$T_{CKH}$	30	-	-	ns
SPCL low width	$T_{CKL}$	30	-	-	ns
Data setup time	$T_{SU1}$	12	-	-	ns
Data hold time	$T_{HD1}$	12	-	-	ns
SPENA to SPCK setup time	$T_{CS}$	20	-	-	ns
SPENA to SPDA hold time	$T_{CE}$	20	-	-	ns
SPENA high pulse width	$T_{CD}$	50	-	-	ns
SPDA output latency	$T_{CR}$		1/2	-	$T_{CK}$

● SPI "read" timing

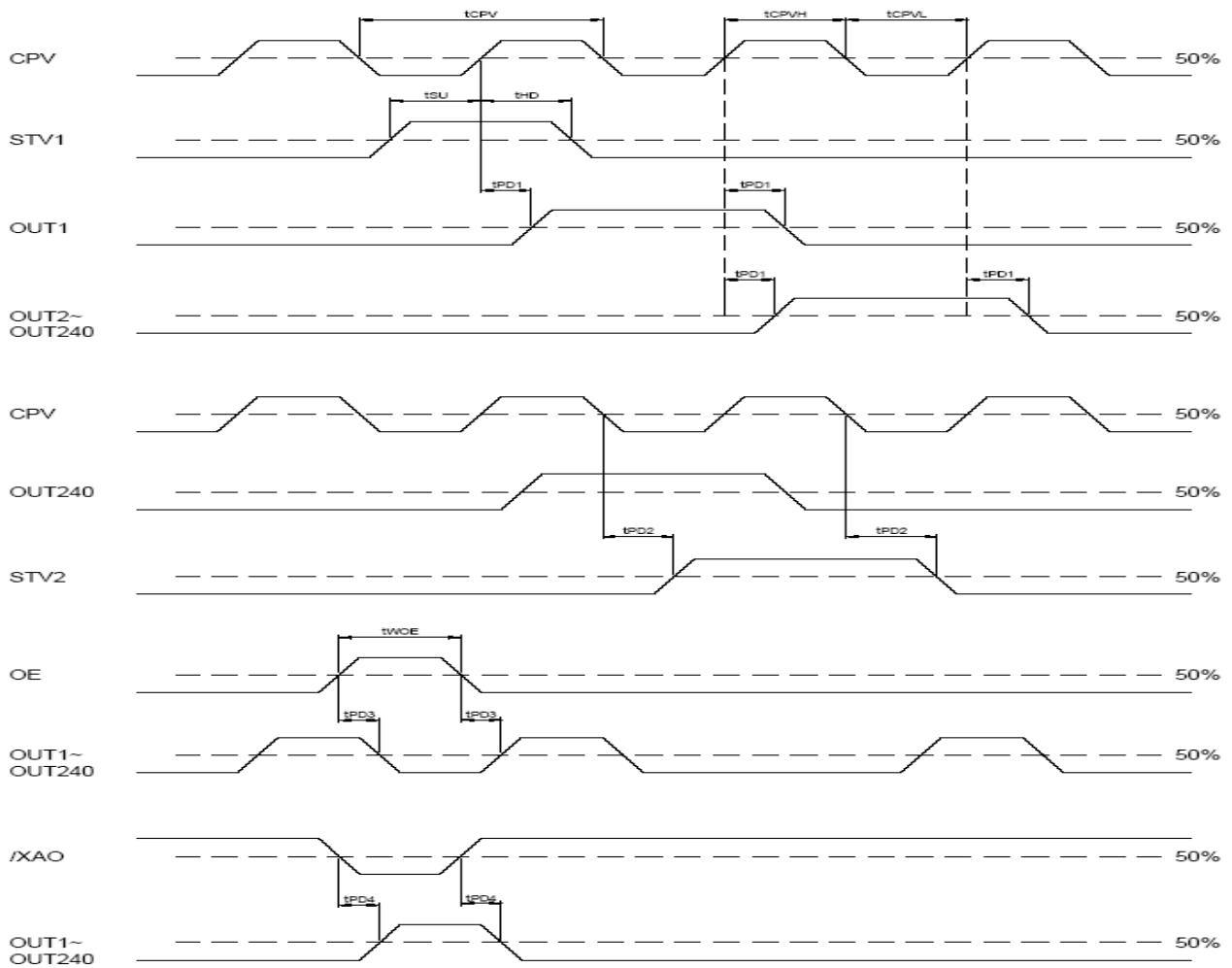


● SPI "write" timing



11.7. Gate Driver Timing Chart

Parameter	Symbol	Condition	Spec		Unit
			Min.	Max.	
Operation frequency	tCPV		5	-	μs
CPV pulse width	tCPVH,tCPVL	50%duty cycle	2.5	-	
OE pulse width	twOE		1	-	
Data setup time	tsu		0.4	-	us
Data hold time	thd		0.7	-	
Output delay time	tpd1	CL=300pF	-	1	
Output delay time	tpd2	CL=300pF	-	0.8	
Output delay time	tpd3	CL=300pF	-	0.8	
Output delay time	tpd4	CL=300pF	-	10	



## 12. Optical Characteristics

Item	Symbol	Condition.	Min	Typ.	Max.	Unit	Remark	
Response time	Tr	$\theta=0^\circ$ 、 $\phi=0^\circ$	-	15	30	.ms	Note 3	
	Tf		-	35	50	.ms		
Contrast ratio	CR	At optimized viewing angle	150	250	-	-	Note 4	
Color Chromaticity	White	$\theta=0^\circ$ 、 $\phi=0^\circ$	Wx	0.282	0.312	0.342		Note 2,6,7
			Wy	0.319	0.349	0.379		
Viewing angle (Gray Scale Inversion Direction)	Hor.	$CR \geq 10$	$\theta_R$	60	70		Deg	Note 1
			$\theta_L$	60	70			
	Ver.		$\phi_T$	40	50			
			$\phi_B$	60	70			
Brightness	-	-	550	600	-	cd/m <sup>2</sup>	Center of display	
Uniformity	(U)	-	75	-	-	%	Note 5	

Ta=25±2°C, IL=140mA

Note 1: Definition of viewing angle

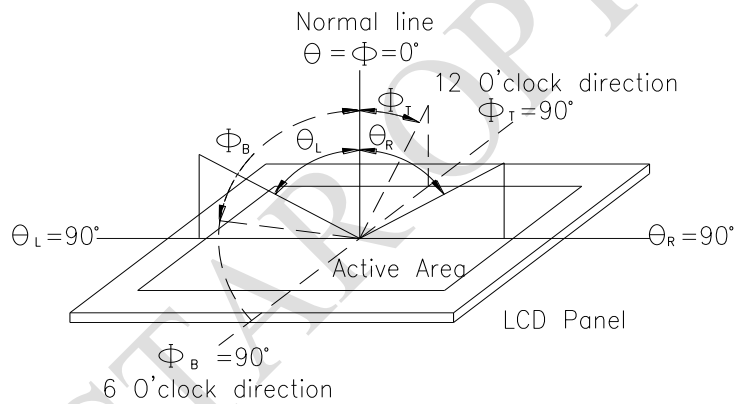


Fig.12.1. Definition of viewing angle

Note 2: Test equipment setup:

After stabilizing and leaving the panel alone at a driven temperature for 10 minutes, the measurement should be executed. Measurement should be executed in a stable, windless, and dark room. Optical specifications are measured by Topcon BM-7orBM-5 luminance meter 1.0° field of view at a distance of 50cm and normal direction.

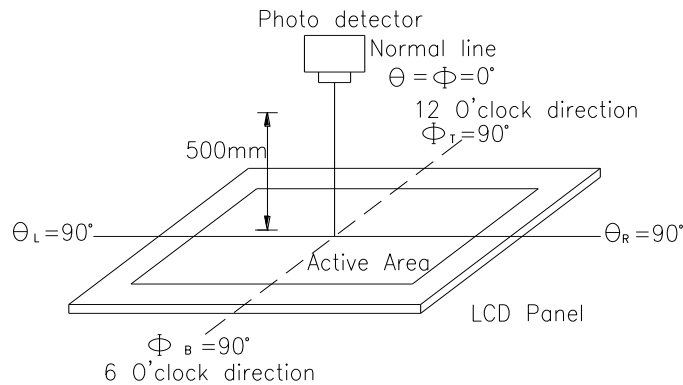
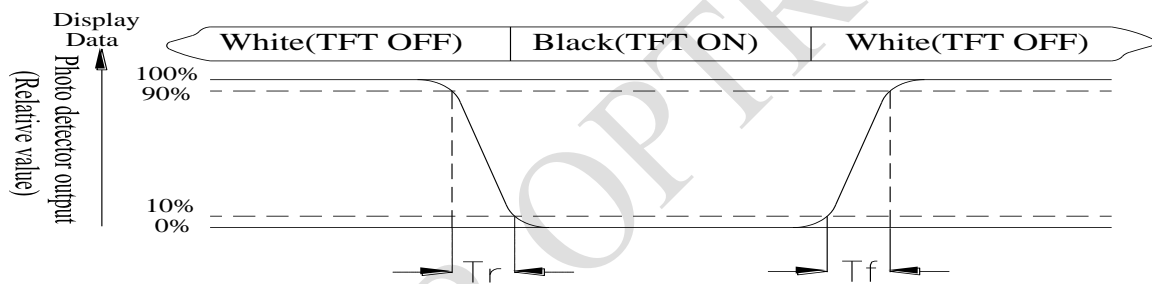


Fig. 12.2. Optical measurement system setup

**Note 3: Definition of Response time:**

The response time is defined as the LCD optical switching time interval between “White” state and “Black” state. Rise time,  $T_r$ , is the time between photo detector output intensity changed from 90% to 10%. And fall time,  $T_f$ , is the time between photo detector output intensity changed from 10% to 90%



**Note 4: Definition of contrast ratio:**

The contrast ratio is defined as the following expression.

$$\text{Contrast ratio (CR)} = \frac{\text{Luminance measured when LCD on the "White" state}}{\text{Luminance measured when LCD on the "Black" state}}$$

Note 5: Definition of Luminance Uniformity

Active area is divided into 9 measuring areas (reference the picture in below). Every measuring point is placed at the center of each measuring area.

$$\text{Luminance Uniformity (U)} = L_{\min}/L_{\max} \times 100\%$$

L = Active area length

W = Active area width

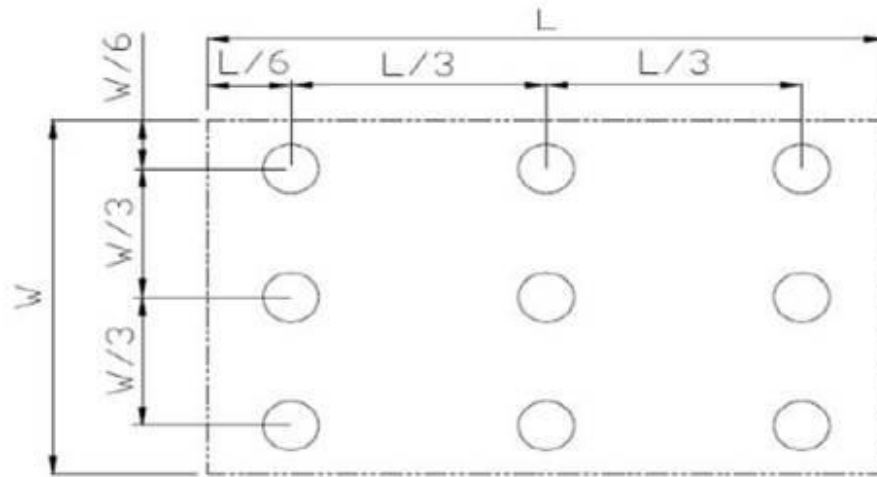


Fig12.3. Definition of uniformity

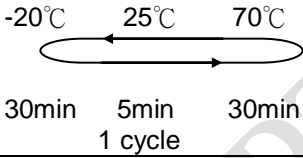
Note 6: Definition of color chromaticity (CIE 1931)

Color coordinates measured at the center point of LCD

Note 7: Measured at the center area of the panel when all the input terminals of LCD panel are electrically opened.

### 13. Reliability

Content of Reliability Test (Wide temperature, -20°C ~70°C)

Environmental Test			
Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	80°C 200hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	70°C 200hrs	—
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-20°C 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 60°C, 90%RH max	60°C, 90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation  <div style="text-align: center;">  <p>-20°C    25°C    70°C</p> <p>30min    5min    30min</p> <p>1 cycle</p> </div>	-20°C/70°C 10 cycles	—
Vibration test	Endurance test applying the vibration during transportation and using.	Total fixed amplitude : 1.5mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes	3
Static electricity test	Endurance test applying the electric stress to the terminal.	VS=±600V(contact) , ±800v(air), RS=330Ω CS=150pF 10 times	—

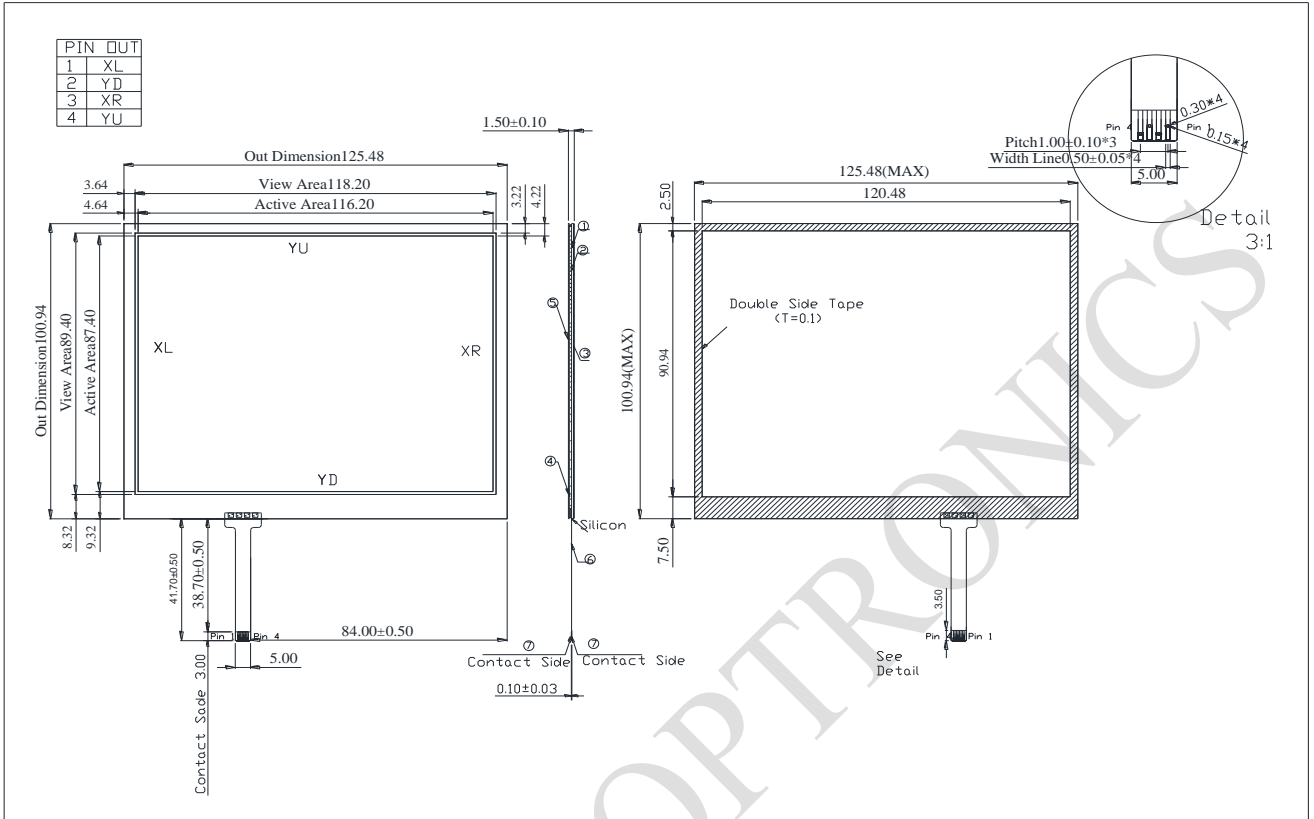
Note1: No dew condensation to be observed.

Note2: The function test shall be conducted after 4 hours storage at the normal Temperature and humidity after remove from the test chamber.

Note3: The packing have to including into the vibration testing.



# 14.Touch Panel Information



14.1. Resistance Touch Panel General Specifications

Item	Description
Driving condition	DC5V
Operating force	60~150g
Linearity max	$\leq \pm 1.5\%$
Insulating resistance	$> 20M\Omega$ , 25V(DC)
Light transparence	70%
Structure type	ITO Film/ITO Glass(F/G)
Surface Hardness	3H typ
Pen Hitting Durability (with the silicon rubber)	$> 1000,000$ times
X Axis resistance	200~900 $\Omega$
Y Axis resistance	200~900 $\Omega$

RAYSTAR OPTRONICS

**LCM Sample Estimate Feedback Sheet**

**Module Number :** \_\_\_\_\_

**1 、 Panel Specification :**

1. Panel Type :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2. View Direction :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3. Numbers of Dots :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4. View Area :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5. Active Area :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
6. Operating Temperature :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
7. Storage Temperature :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
8. Others :	_____	

**2 、 Mechanical Specification :**

1. PCB Size :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2. Frame Size :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3. Material of Frame :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4. Connector Position :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5. Fix Hole Position :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
6. Backlight Position :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
7. Thickness of PCB :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
8. Height of Frame to PCB :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
9. Height of Module :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
10. Others :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____

**3 、 Relative Hole Size :**

1. Pitch of Connector :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2. Hole size of Connector :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3. Mounting Hole size :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4. Mounting Hole Type :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5. Others :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____

**4 、 Backlight Specification :**

1. B/L Type :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2. B/L Color :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3. B/L Driving Voltage (Reference for LED Type) :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4. B/L Driving Current :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5. Brightness of B/L :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
6. B/L Solder Method :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
7. Others :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____

>> **Go to page 2** <<

<b>Module Number :</b> _____		
<b>5 · <u>Electronic Characteristics of Module</u> :</b>		
1.Input Voltage :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2.Supply Current :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3.Driving Voltage for LCD :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4.Contrast for LCD :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5.B/L Driving Method :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
6.Negative Voltage Output :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
7.Interface Function :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
8.LCD Uniformity :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
9.ESD test :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
10.Others :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
<b>6 · <u>Summary</u> :</b>		
<p style="text-align: right;">Sales signature : _____</p> <p style="text-align: right;">Customer Signature : _____      <u>Date</u> :   /   / _____</p>		

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