

Version : 1.2

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[Http://www.lcdfriends.com](http://www.lcdfriends.com)

TECHNICAL SPECIFICATION

MODEL NO. : PA025XS1

☐ Customer's Approved

Customer \_\_\_\_\_

Date \_\_\_\_\_

By \_\_\_\_\_

☐ PVI's Confirmation

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Date : Jan. 11, 2002

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# TECHNICAL SPECIFICATION

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## 1. Application

This technical specification applies to 2.5" color TFT-LCD panel. The 2.5" color TFT LCD panel is designed for camcorder, digital camera application and other electronic products which require high quality flat panel displays.

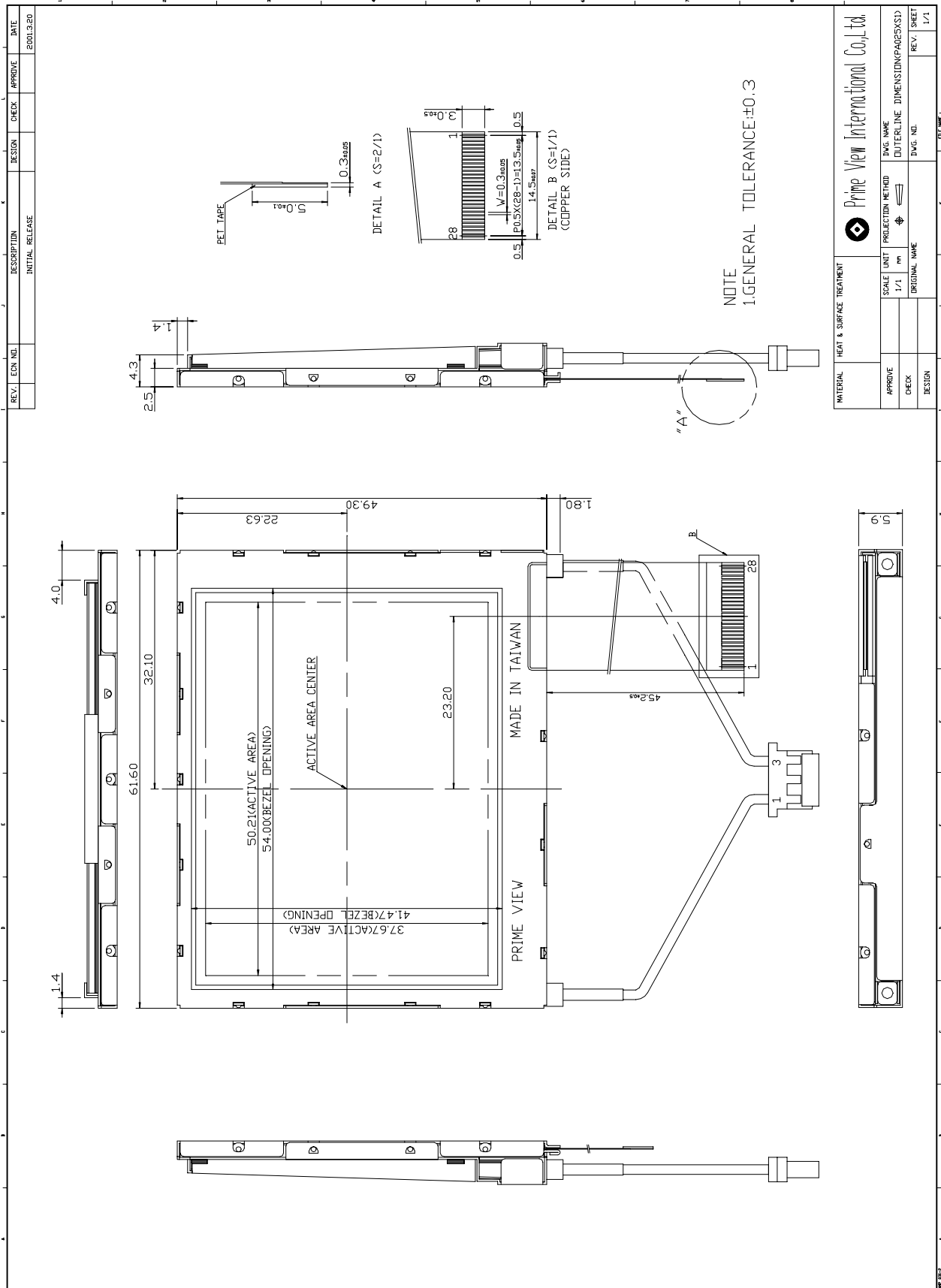
## 2. Features

- . Compatible with NTSC or PAL system
- . High Resolution : 112,320 Dots
- . Optimum Viewing Direction : 6 o'clock
- . Up/Down and Left/Right Image Reversion

## 3. Mechanical Specifications

| Parameter           | Specifications                | Unit |
|---------------------|-------------------------------|------|
| Screen Size         | 2.5 (diagonal)                | inch |
| Surface Treatment   | Anti-Glare                    |      |
| Display Format      | 480 × 234                     | dot  |
| Active Area         | 50.21 × 37.67                 | mm   |
| Dot Pitch           | 0.105(W) × 0.161(H)           | mm   |
| Pixel Configuration | Delta                         |      |
| Outline Dimension   | 61.6 (W) × 49.3 (H) × 5.9 (D) | mm   |
| Weight              | 28±3                          | g    |

## 4. Mechanical Drawing of panel:



## 5.Input / Output Terminals

| Pin No | Symbol           | I/O | Description                                | Remark   |
|--------|------------------|-----|--------------------------------------------|----------|
| 1      | STH1             | I/O | Start pulse for source driver              | Note 5-1 |
| 2      | AV <sub>SS</sub> | I   | Analog GND for source driver               |          |
| 3      | AV <sub>DD</sub> | I   | Analog power input for source driver       | Note 5-2 |
| 4      | V <sub>B</sub>   | I   | Video Input B                              | Note 5-4 |
| 5      | V <sub>G</sub>   | I   | Video Input G                              |          |
| 6      | V <sub>R</sub>   | I   | Video Input R                              |          |
| 7      | V <sub>SS</sub>  | I   | Digital GND                                |          |
| 8      | V <sub>DD</sub>  | I   | Digital power input                        | Note 5-3 |
| 9      | CPH1             | I   | Sampling and shift clock for source driver |          |
| 10     | CPH2             | I   | Sampling and shift clock for source driver |          |
| 11     | CPH3             | I   | Sampling and shift clock for source driver |          |
| 12     | STH2             | I/O | Start pulse for source driver              | Note 5-1 |
| 13     | Q2H              | I   | Video input rotation control               |          |
| 14     | INH              | I   | Output enable for source driver            |          |
| 15     | R/L              | I   | Left/Right Control for source driver       | Note 5-1 |
| 16     | V <sub>COM</sub> | I   | Common electrode voltage                   | Note 5-4 |
| 17     | V <sub>COM</sub> | I   | Common electrode voltage                   |          |
| 18     | XOE              | I   | Output enable for gate driver              |          |
| 19     | CPV              | I   | Clock input for gate driver                |          |
| 20     | U/D              | I   | Up/Down Control for gate driver            |          |
| 21     | DIO2             | I/O | Vertical start pulse                       | Note 5-5 |
| 22     | DIO1             | I/O | Vertical start pulse                       |          |
| 23     | V <sub>GL</sub>  | I   | Gate off voltage(alternative every 1-H)    | Note 5-4 |
| 24     | V <sub>EE</sub>  | I   | Gate driver negative voltage               | Note 5-6 |
| 25     | V <sub>SS</sub>  | I   | GND                                        |          |
| 26     | V <sub>CC</sub>  | I   | Logic power for gate driver                | Note 5-3 |
| 27     | V <sub>GH</sub>  | I   | Gate on voltage                            | Note 5-7 |
| 28     | NC               | -   | No connection                              | -        |

Note 5-1 : STH1, STH2 and R/L mode

| R/L          | STH1   | STH2   | Remark        |
|--------------|--------|--------|---------------|
| High(VDD)    | Input  | Output | Left to Right |
| Low(0 Volt.) | Output | Input  | Right to Left |

Note 5-2 : AV<sub>DD</sub> = +5V (Typ.)

Note 5-3 :  $V_{DD}, V_{CC} = +5V$  (Typ.)

Note 5-4 :  $V_{COM} = 6V_{PP}$ .

Phase of the video signal input and  $V_{COM}$

The relation between these values could refer to 8-1 Operating condition.

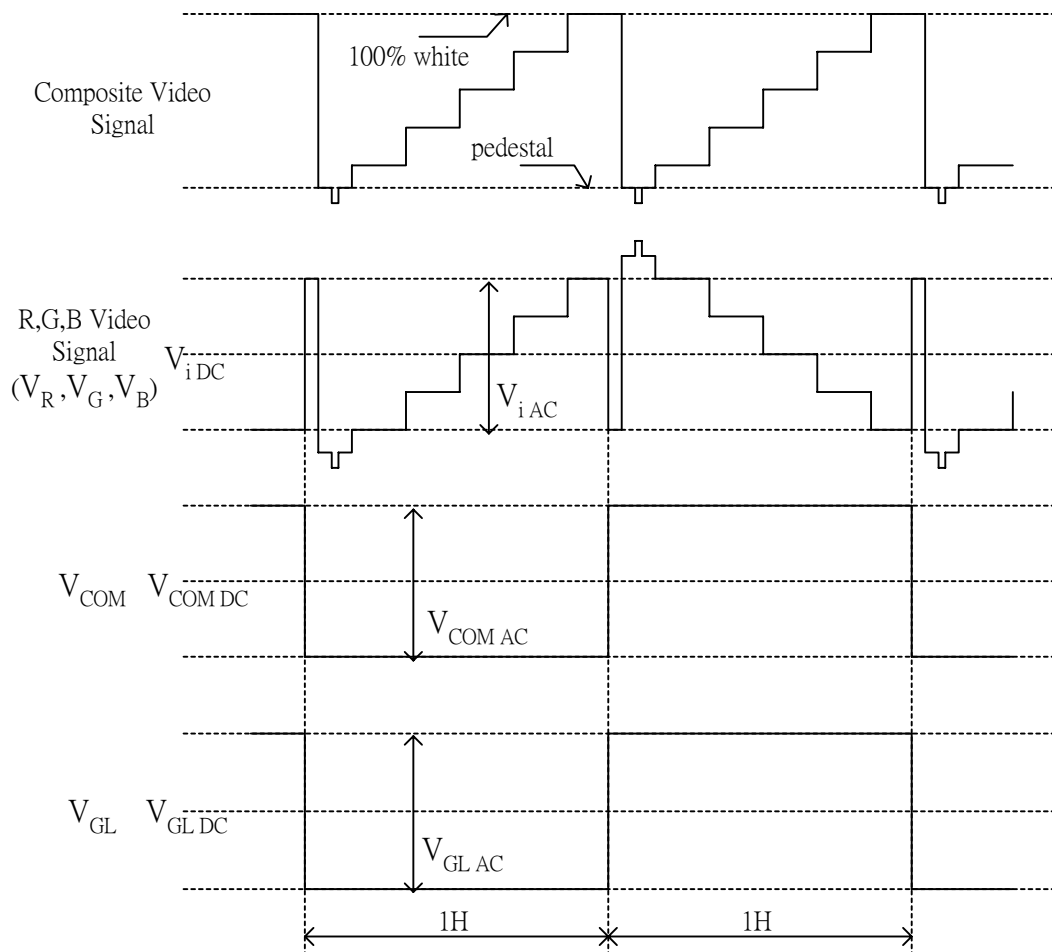


Fig.1

Liquid crystal transmission of the video signal input,  $V_{COM}$  and timing

|                            | $V_{COM}$ |         |
|----------------------------|-----------|---------|
|                            | H Level   | L Level |
| Video Signal Input Maximum | Black     | White   |
| Video Signal Input Minimum | White     | Black   |

White : maximum transmission / Black : minimum transmission

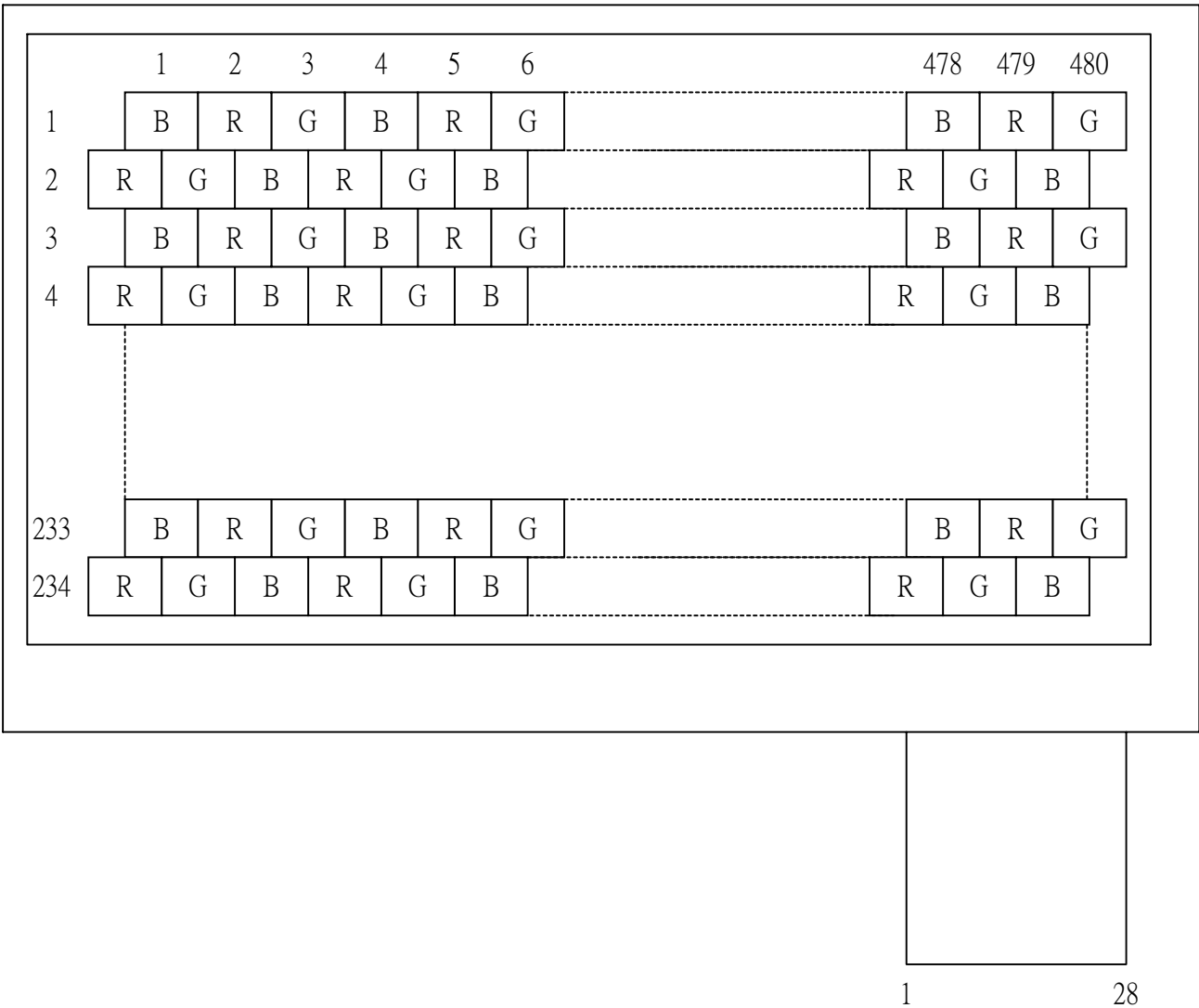
Note 5-5 : DIO1, DIO2 and U/D mode

| U/D           | DIO1   | DIO2   | Remark     |
|---------------|--------|--------|------------|
| High (VDD)    | Input  | Output | Down to Up |
| Low (0 Volt.) | Output | Input  | Up to Down |

Note 5-6 :  $V_{EE} = -15V$  (Typ.).

Note 5-7 :  $V_{GH} = +15V$  (Typ.).

6. Pixel Arrangement and input connector pin NO.



## 7. Absolute Maximum Ratings:

The followings are maximum values , which if exceeded, may cause faulty operation or damage to the unit.

GND = 0 V , Ta = 25 °C

| Parameter                        |          | Symbol            | MIN. | MAX. | Unit | Remark    |
|----------------------------------|----------|-------------------|------|------|------|-----------|
| Supply Voltage for Source Driver | Analog   | $AV_{DD}$         | -0.3 | +7.0 | V    |           |
|                                  | Digital  | $V_{DD}$          | -0.3 | +7.0 | V    |           |
| Supply Voltage for Gate Driver   | Positive | $V_{GH}$          | -0.3 | +45  | V    |           |
|                                  | Negative | $V_{GL}$          | -23  | +0.3 | V    |           |
|                                  |          | $V_{GH} - V_{GL}$ | +15  | +40  | V    |           |
| Analogue input voltage           |          | $V_{Video}$       | -0.3 | +7.3 | V    | Notes:7-1 |
| Storage Temperature              |          |                   | -20  | +70  | °C   |           |
| Operation Temperature            |          |                   | 0    | +60  | °C   | Notes:7-2 |

Notes 7-1 : Analog Input Voltage means  $V_R, V_G, V_B$ .

Notes 7-2 : Operating Temperature define that contrast, response time, other display optical character are Ta=+25.

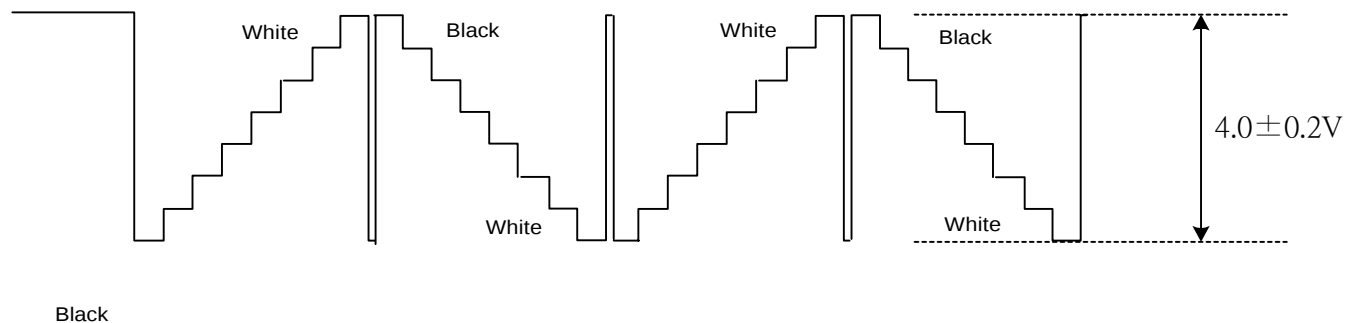
## 8. Electrical Characteristics

### 8-1) Operating Condition

| Item                             |              | Symbol   | Min.          | Typ.  | Max.          | Unit      | Remark                    |
|----------------------------------|--------------|----------|---------------|-------|---------------|-----------|---------------------------|
| Power Supply                     | $V_{CC}$     |          | +4.5          | +5.0  | +5.5          | V         |                           |
|                                  | $V_{DD}$     |          | +3.0          | +3.3  | +3.6          | V         |                           |
|                                  | $AV_{DD}$    |          | +4.5          | +5.0  | +5.5          | V         |                           |
|                                  | $V_{GH}$     |          | +14.5         | +15.0 | +15.5         | V         |                           |
|                                  | $V_{EE}$     |          | -15.5         | -15.0 | -14.5         | V         |                           |
|                                  | $V_{GL AC}$  |          | -             | +6.0  | -             | $V_{P-P}$ | AC Component of $V_{GL}$  |
|                                  | $V_{GL DC}$  |          | -12.5         | -11.0 | -9.5          | V         | DC Component of $V_{GL}$  |
| Video Signal ( $V_R, V_G, V_B$ ) | $V_{i AC}$   |          | -             | +4.0  | +4.2          | $V_{P-P}$ | AC Component Note 8-2     |
|                                  | $V_{i DC}$   |          | -             | +2.5  | -             | V         | DC Component              |
| $V_{COM}$                        | $V_{COM AC}$ |          | -             | +6.0  | -             | $V_{P-P}$ | AC Component of $V_{COM}$ |
|                                  | $V_{COM DC}$ |          | +0.9          | +1.0  | +1.1          | V         | DC Component of $V_{COM}$ |
|                                  | H Level      | $V_{IH}$ | +0.7 $V_{DD}$ | -     | -             | V         | Note 8-1                  |
|                                  | L Level      | $V_{IL}$ | -             | -     | +0.3 $V_{DD}$ | V         |                           |

Note 8-1 : STH1,STH2,CPH1,CPH2,CPH3,Q2H,INH,CPV,XOE,DIO1,DIO2

Note 8-2 : Both NTSC and PAL system Video Signal input waveform is based on 8 steps gray scale.



### 8-2) Current Consumption (GND=AV<sub>SS</sub>=0V)

Ta= 25 °C

| Parameter          | Symbol          | Condition             | Min. | Typ.  | Max. | Unit | Remark                         |
|--------------------|-----------------|-----------------------|------|-------|------|------|--------------------------------|
| Current for Driver | I <sub>GH</sub> | V <sub>GH</sub> =+15V | -    | 0.026 | 0.03 | mA   |                                |
|                    | I <sub>GL</sub> | V <sub>GL</sub> =-12V | -    | 0.35  | 0.4  | mA   | V <sub>GL</sub> center voltage |
|                    | I <sub>CC</sub> | V <sub>CC</sub> =+5V  | -    | 0.1   | 0.15 | mA   |                                |
|                    | A <sub>DD</sub> | AV <sub>DD</sub> =+5V | -    | 1.73  | 1.83 | mA   |                                |
|                    | I <sub>DD</sub> | V <sub>DD</sub> =+5V  | -    | 0.66  | 0.7  | mA   |                                |
|                    | I <sub>EE</sub> | V <sub>EE</sub> =-15V | -    | 0.1   | 0.15 | mA   |                                |

### 8-3) Backlight driving & Power Consumption

| Pin No | Symbol | Description                       | Remark   |
|--------|--------|-----------------------------------|----------|
| 1      | VL1    | Input terminal (Hi voltage side)  |          |
| 3      | VL2    | Input terminal (Low voltage side) | Note 8-3 |

Note 8-3 : Low voltage side of backlight inverter connects with Ground of inverter circuits.

Ta= 25 °C

| Parameter               | Symbol         | Min. | Typ. | Max. | Unit | Remark              |
|-------------------------|----------------|------|------|------|------|---------------------|
| Lamp voltage            | V <sub>L</sub> | -    | 235  | -    | Vrms | I <sub>L</sub> =3mA |
| Lamp current            | I <sub>L</sub> |      | 3    |      | mA   |                     |
| Lamp frequency          | P <sub>L</sub> | 25   | 35   | 45   | KHz  | Note 8-4            |
| Kick-off voltage(25 °C) | Vs             | -    | -    | 400  | Vrms |                     |
| Kick-off voltage(0 °C)  | Vs             | -    | -    | 520  | Vrms |                     |

Note 8-4 : The waveform of lamp driving voltage should be as closed to a perfect SIN wave as possible.

### Power Consumption

Ta= 25 °C

| Parameter                        | Symbol | Conditions | TYP. | Unit | Remark   |
|----------------------------------|--------|------------|------|------|----------|
| LCD Panel Power Consumption      |        |            | 18.5 | mW   | Note 8-5 |
| Backlight Lamp Power Consumption |        |            | 0.71 | W    | Note 8-6 |
| Total Power Consumption          |        |            | 0.73 | W    |          |

Note 8-5 : The power consumption for backlight is not included.

Note 8-6 : Backlight lamp power consumption is calculated by  $I_L \times V_L$ .

#### 8-4) Input / Output Connector

A) LCD Module Connector  
FFC Down Connector,  
28 Pins  
Pitch : 0.5 mm

B) Backlight Connector  
JST BHR-03VS-1  
Pin No. : 3  
Pitch : 4 mm

## 8-5) Timing Characteristics Of Input Signals

| Characteristics                   | Symbol            | Min.  | Typ.  | Max.  | Unit | Remark          |
|-----------------------------------|-------------------|-------|-------|-------|------|-----------------|
| 1Field Scanning Period            | t1V               | -     | 262.5 | -     | H    |                 |
| 1Line Scanning Period             | t1H               | -     | 63.5  | -     | μs   |                 |
| Source Driver Operating Frequency | fhc               | 1.0   | 3.14  | 5.0   | MHz  |                 |
| Signal Sampling Pulse Width       | tchwh             | 200   | 317.7 | 1000  | ns   |                 |
| Signal Sampling Pulse Delay       | tchd              | 95.3  | 105.9 | 116.5 | ns   | tchd 12,23      |
| Signal Sampling Pulse Width(H)    | tchwh             | 142.9 | 158.8 | 174.7 | ns   |                 |
| Signal Sampling Pulse Delay(L)    | tchwl             | 142.9 | 158.8 | 174.7 | ns   |                 |
| Source Start Signal Pulse Width   | tshw              | 90    | 317.7 | 630*  | ns   | *tshset=tshhld  |
| Source Start Signal Setup Time    | tshset            | 20    | 158.8 | -     | ns   |                 |
| Source Start Signal Hold Time     | tshhld            | 20    | 158.8 | -     | ns   |                 |
| Source Output Enable Pulse Width  | tohw              | 1.0   | 2.0   | -     | μs   |                 |
| Source Start Signal Rising Time   | tss               | -     | 9.8   | -     | μs   |                 |
| Video Input Signal Start Point    | tvS               | -     | 10.0  | -     | μs   |                 |
| Phase Difference Between OEH&CPV  | toc               | 1.5   | 2.3   | -     | μs   |                 |
| Gate Clock Period                 | tcwv              | 10    | 63.5  | -     | μs   |                 |
| Gate Clock Pulse Width(H)         | tcvwh             | 10    | 31.7  | 48    | μs   |                 |
| Gate Clock Pulse Width(L)         | tcvwl             | 10    | 31.7  | 48    | μs   |                 |
| Gate Start Signal Pulse Width     | tsvw              | 5     | 63.5  | 126** | μs   | **tsvset=tsvhld |
| Gate Start Signal Setup Time      | tsvset            | 5     | 53.2  | -     | μs   |                 |
| Gate Start Signal Hold Time       | tsvhld            | 5     | 10.3  | -     | μs   |                 |
| Phase Difference Between OEH&STH  | tosp              | -     | 4     | -     | μs   |                 |
| Phase Difference Between SYNC&OEH | tohs              | -     | 1.4   | -     | μs   |                 |
| Gate Output Enable Pulse Width    | toev              | -     | 2.5   | -     | μs   |                 |
| V <sub>COM</sub> Delay Time       | t <sub>DCOM</sub> | -     | -     | 3     | μs   |                 |
| RGB Delay Time                    | t <sub>DRGB</sub> | -     | -     | 2     | μs   |                 |
| Vertical Display Start            | tsv               | -     | 3     | -     | tH   |                 |

8-6) Signal Timing Waveforms

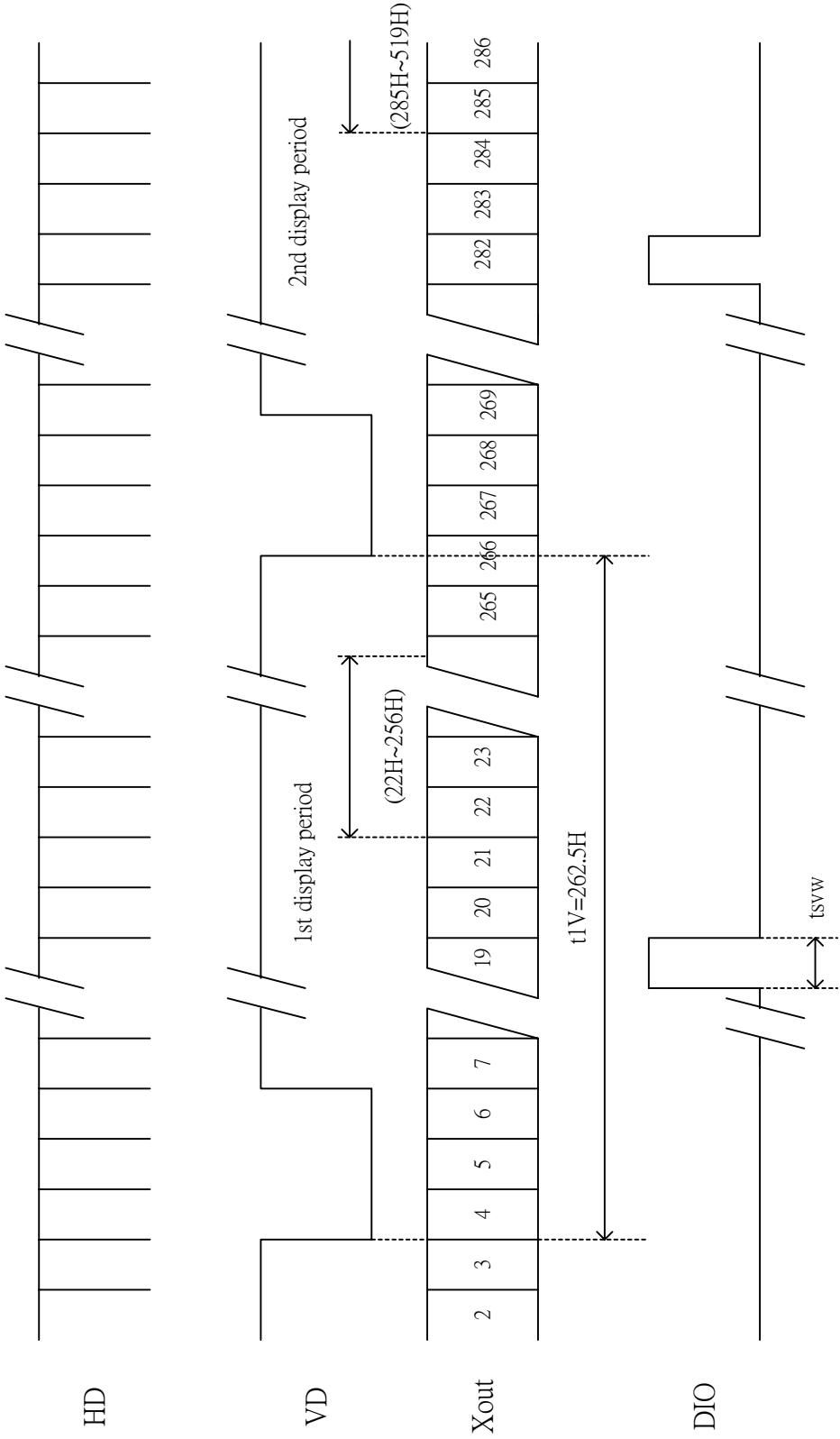
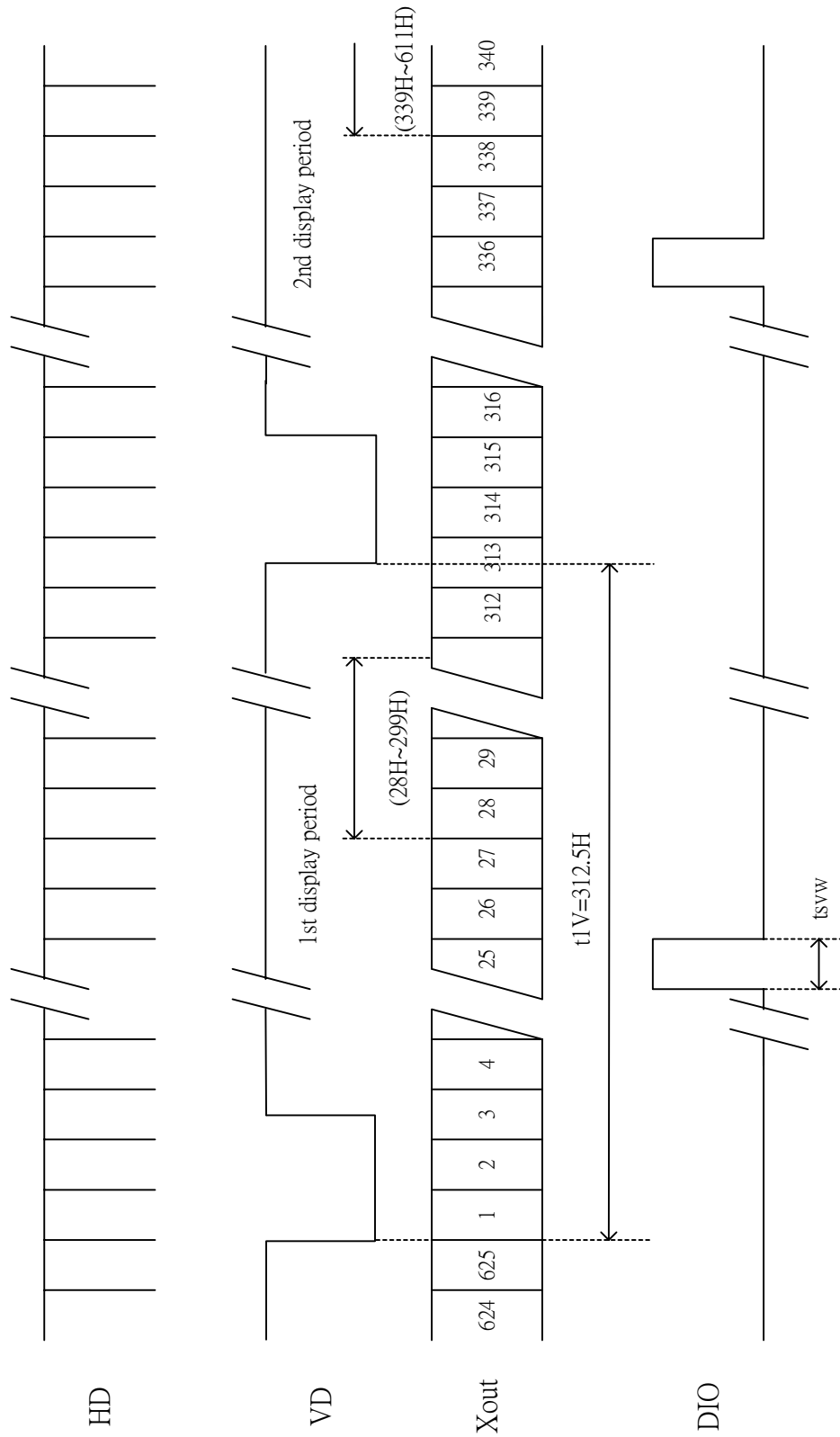


Fig. 8-1 Vertical Start Line for NTSC



\*\* odd field : Scan lines 14n+6 14n+12 (n = 2, 3, 4..) are not displayed.  
 even field : Scan lines 14n+12 14n+20 (n = 2, 3, 4..) are not displayed.

Fig. 8-1 Vertical Start Line for PAL

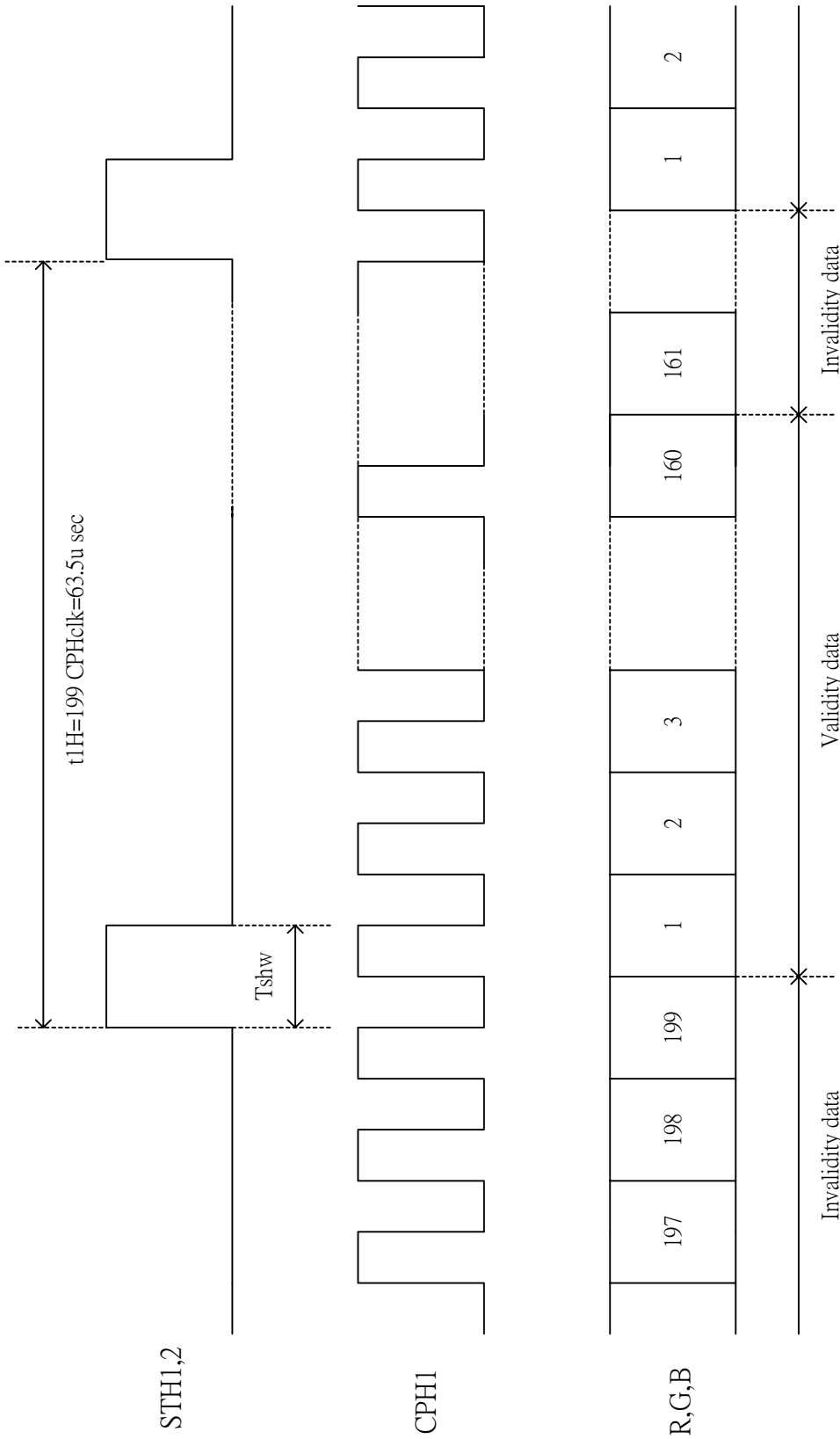


Fig. 8-2 Horizontal Start Pixel

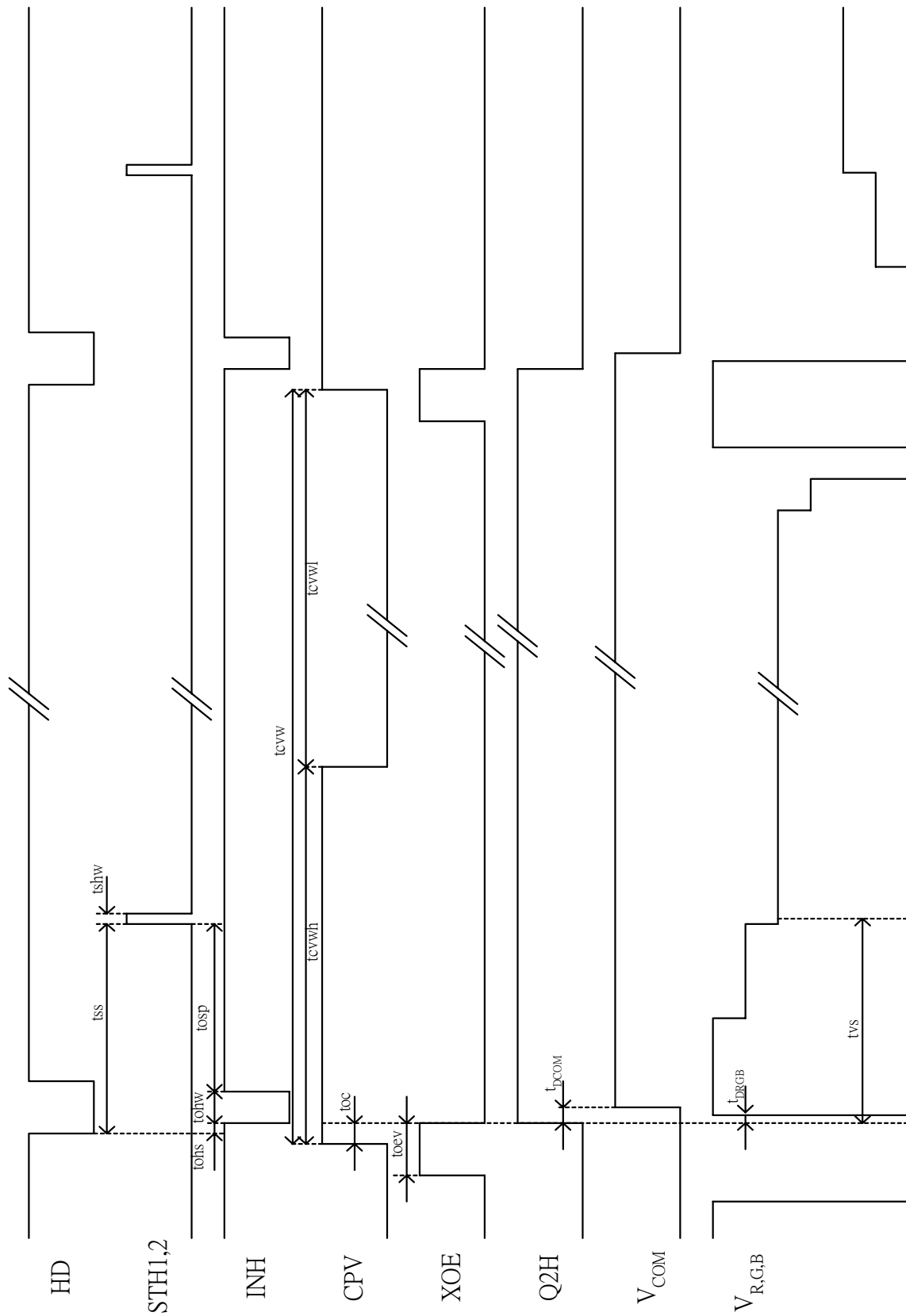


Fig. 8-3 Detail Horizontal Timing

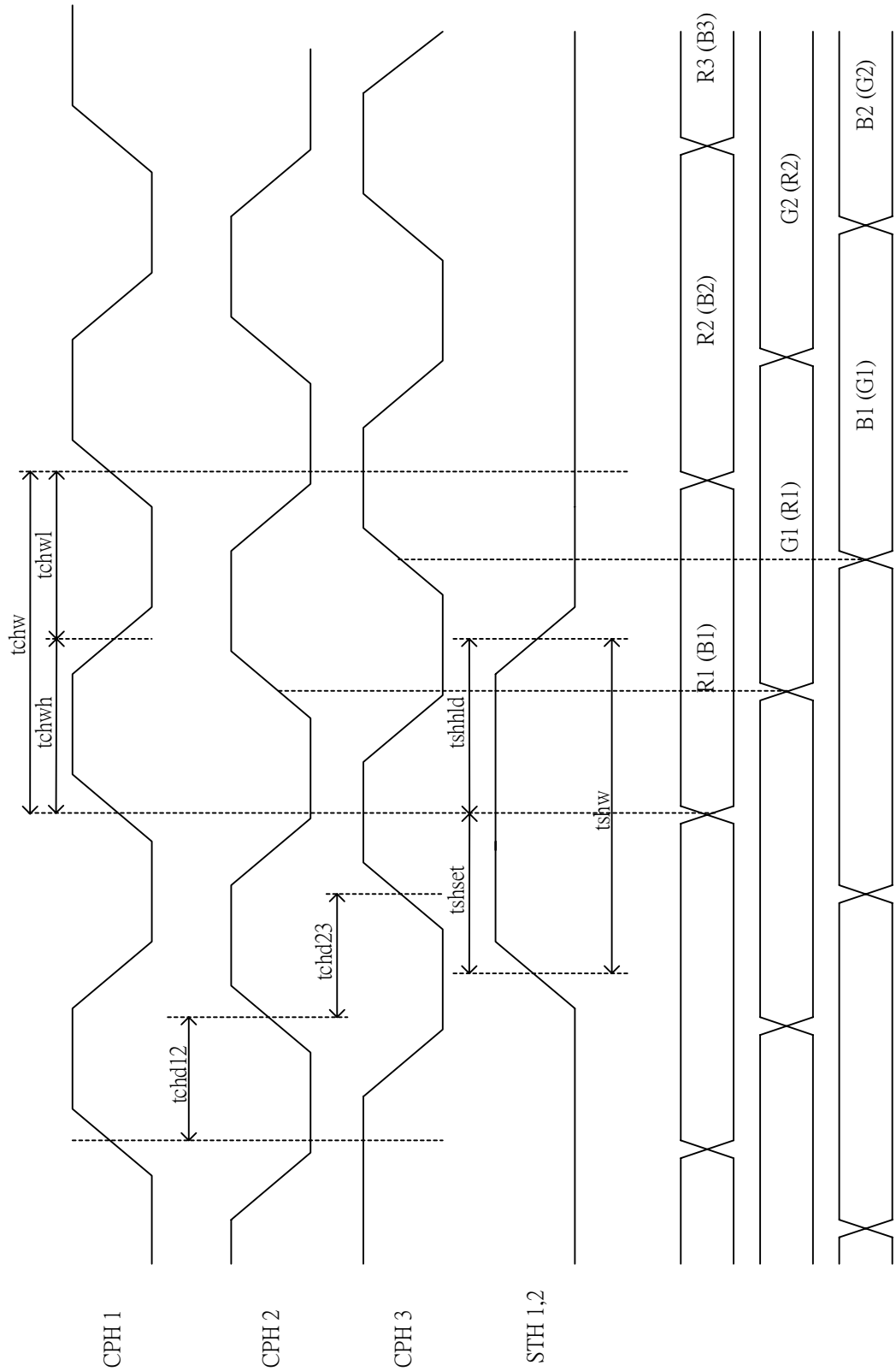


Fig. 8-4 Sampling Clock Timing

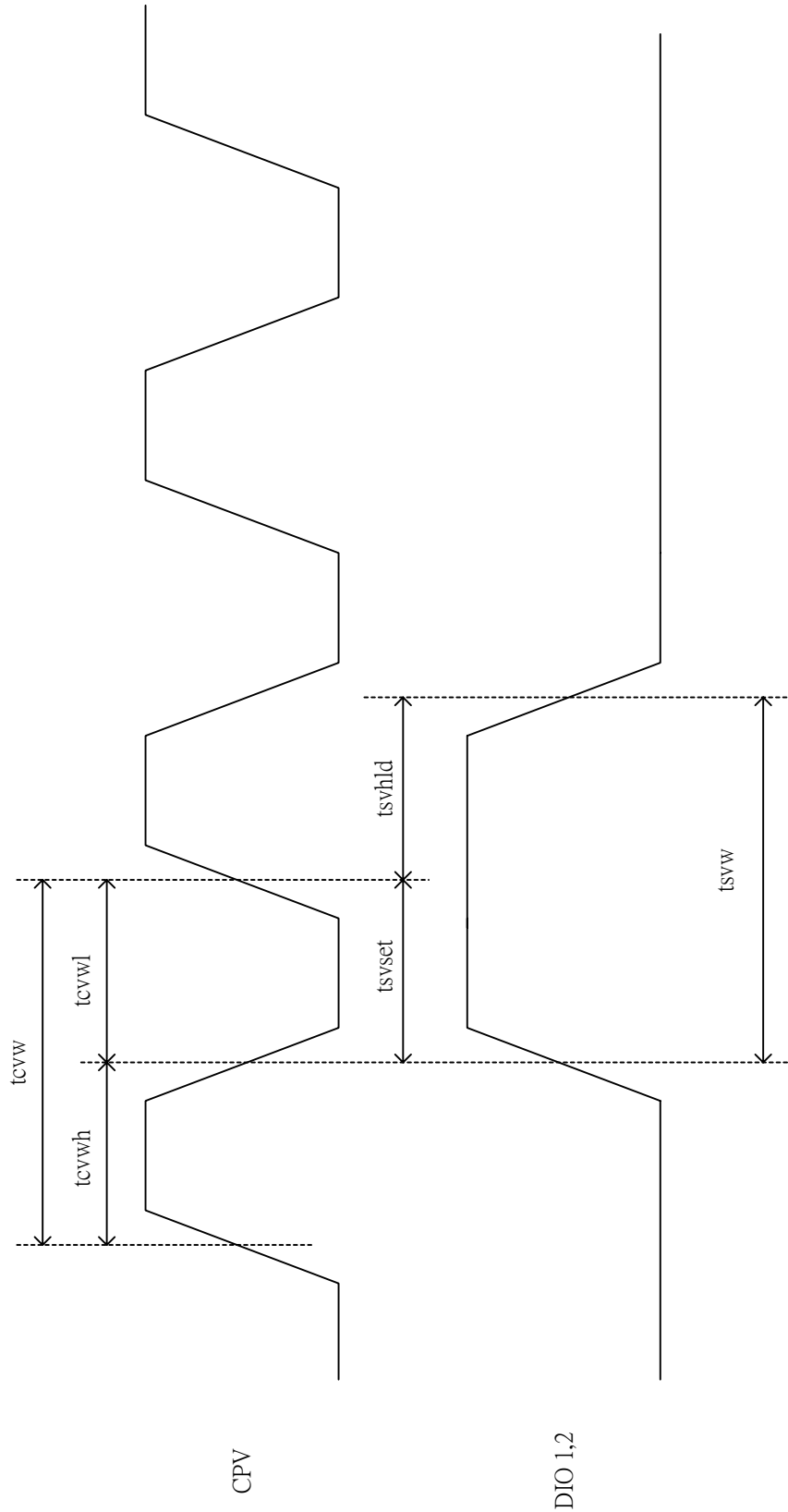


Fig. 8-5 Vertical Shift Clock Timing

Vertical timing (From up to down)

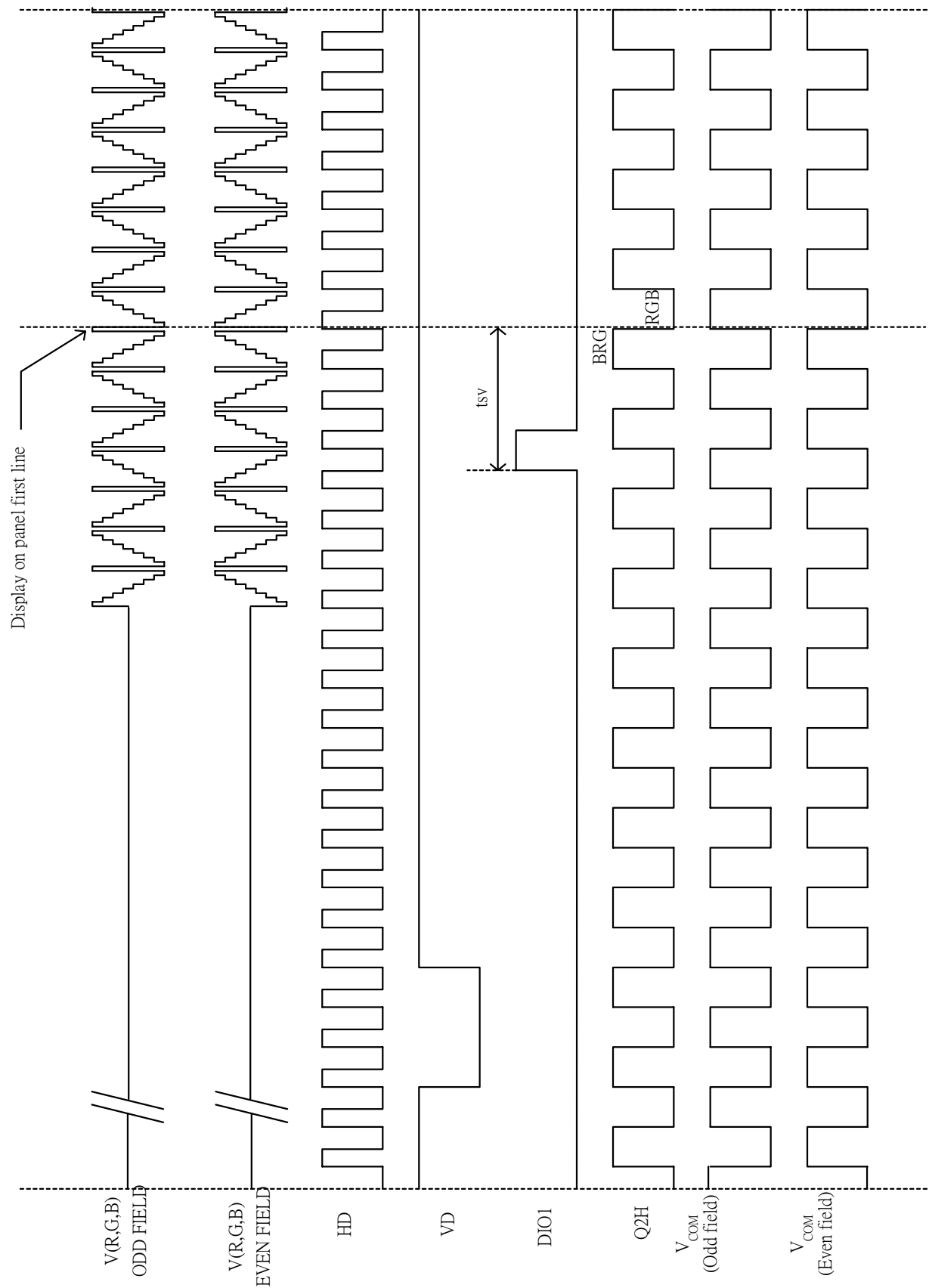


Fig. 8-6(b) Vertical Timing (From Up to Down)

Vertical timing (From down to up)

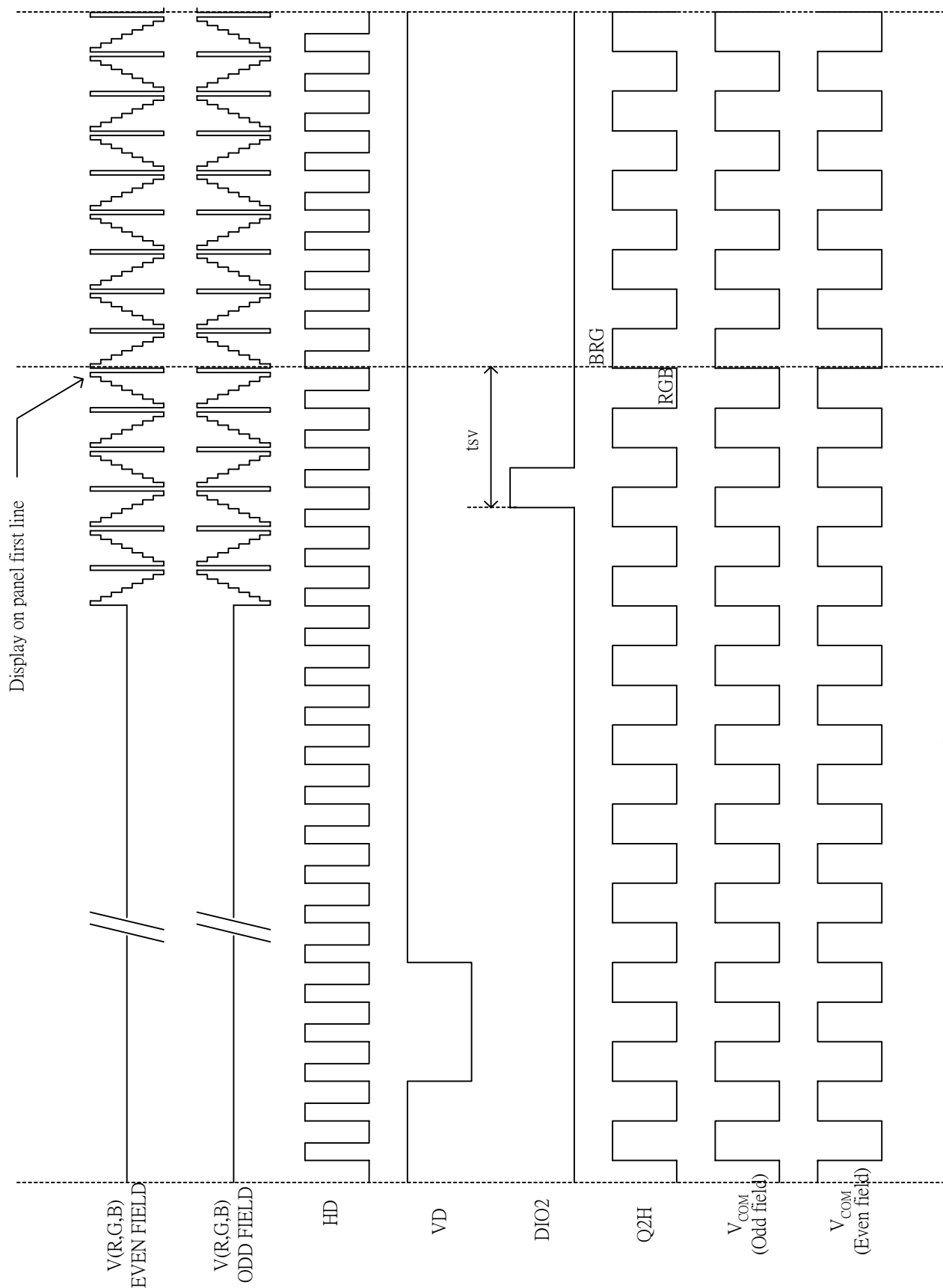
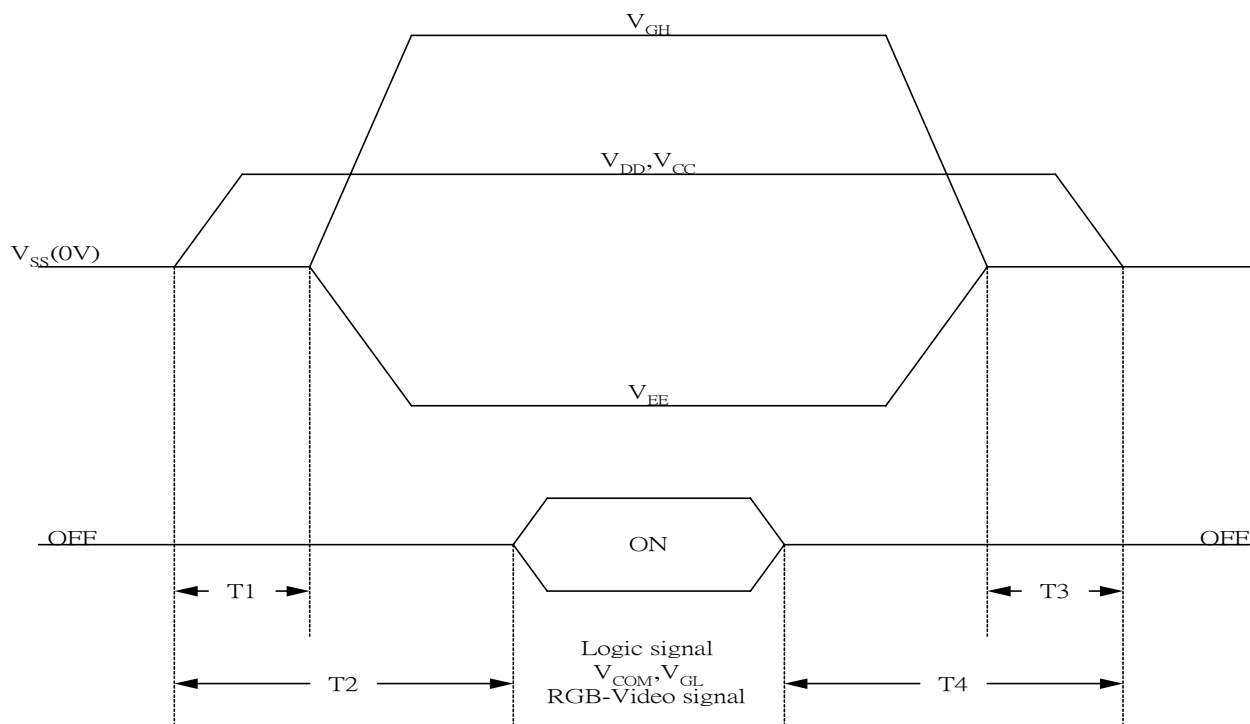


Fig. 8-6(a) Vertical Timing (From Down to Up)

## 9. Power on Sequence(Voltage source)

The Power on Sequence only effect by  $V_{CC}$ ,  $V_{SS}$ ,  $V_{DD}$ ,  $V_{EE}$  and  $V_{GH}$ , the others do not care.



- 1)  $10\text{ms} \leq T1 < T2$
- 2)  $0\text{ms} < T3 \leq T4 \leq 10\text{ms}$

## 10. Optical Characteristics

### 10-1) Specification

$T_a = 25^\circ\text{C}$

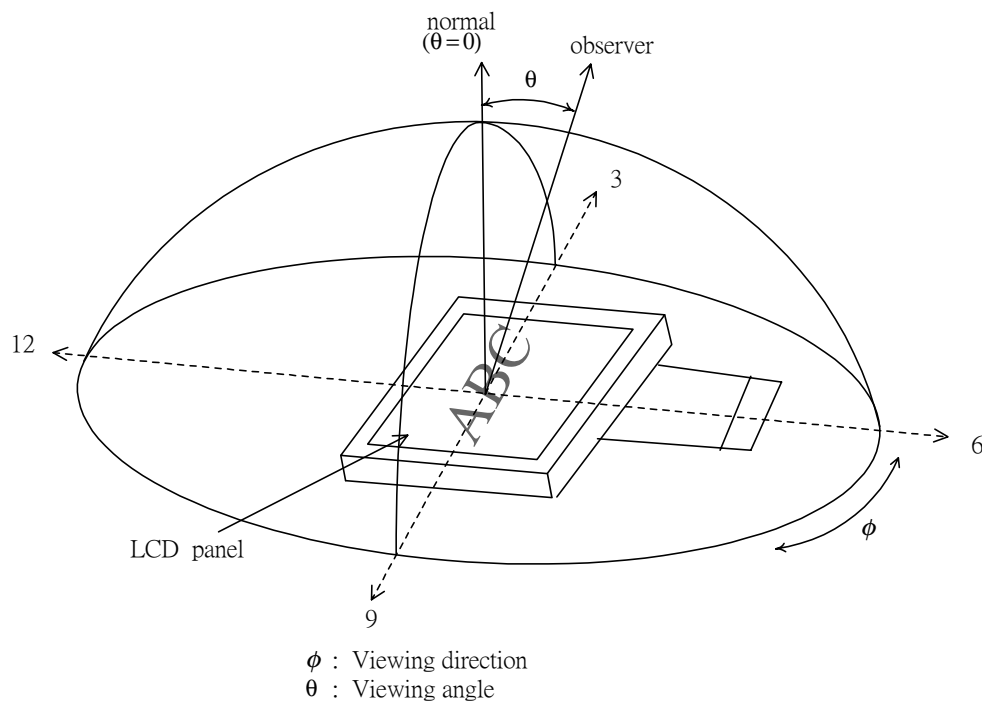
| Parameter          | Symbol     | Condition                  | MIN.     | TYP.     | MAX.  | Unit              | Remarks   |
|--------------------|------------|----------------------------|----------|----------|-------|-------------------|-----------|
| Viewing Angle      | Horizontal | $\theta$                   | $\pm 45$ | $\pm 50$ |       | deg               | Note 10-3 |
|                    | Vertical   | $\theta$ (to 12 o'clock)   | 10       | 15       |       | deg               |           |
|                    |            | $\theta$ (to 6 o'clock)    | 30       | 35       |       | deg               |           |
| Contrast Ratio     | CR         | At optimized Viewing angle | 110      | 150      |       |                   | Note 10-1 |
| Response time      | Rise       | $\theta = 0^\circ$         |          | 15       | 30    | ms                | Note 10-4 |
|                    | Fall       | $\varphi = 0^\circ$        |          | 25       | 50    | ms                |           |
| Transmission Ratio | T          |                            | 7.5      | 8.0      | 8.5   | %                 |           |
| Uniformity         | U          |                            | 65       | 70       |       |                   |           |
| Brightness         |            |                            | 200      | 250      |       | cd/m <sup>2</sup> | Note 10-2 |
| White Chromaticity | X          | $\theta = 0^\circ$         | 0.260    | 0.310    | 0.360 |                   | Note 10-2 |
|                    | Y          |                            | 0.280    | 0.330    | 0.380 |                   |           |
|                    | Tc         |                            | 6650     | 6850     | 7050  |                   |           |
| Lamp Life Time     | +25°C      |                            | 10,000   |          |       | hr                |           |

Note 10-1 :  $CR = \frac{\text{Luminance when LCD is White}}{\text{Luminance when LCD is Black}}$

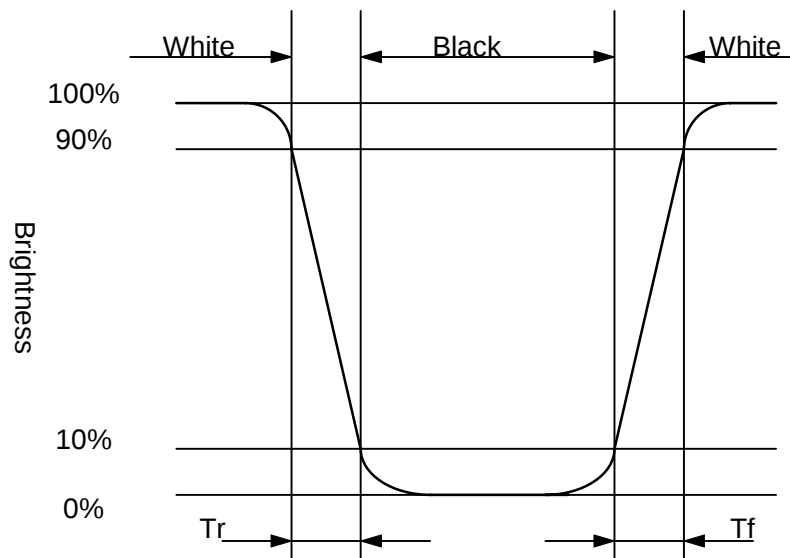
Contrast Ratio is measured in optimum common electrode voltage.  
The test configurations of contrast ratio see section 10-2.

Note 10-2 : 1.Topcon BM-7(fast) luminance meter 1.0° field of view is used in the testing (after 20~30 minutes operation).  
2.Lamp current : 3 mA  
3.Inverter model : TDK-347.

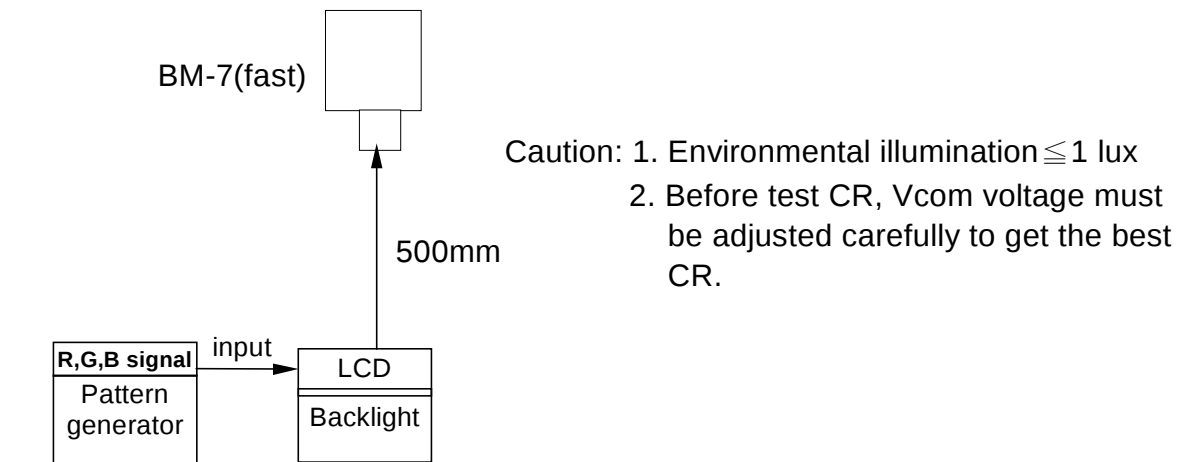
Note 10-3 : The definition of viewing angle diagrams :



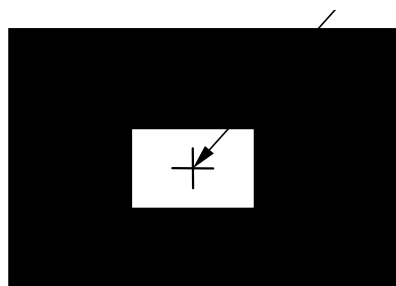
Note 10-4 : The definitions of response time:



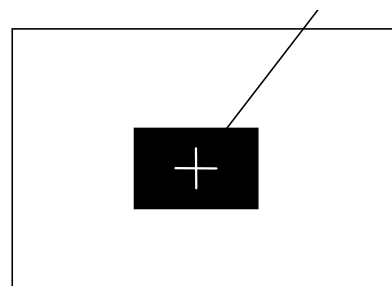
## 10-2) Test Configuration



- LCD Display

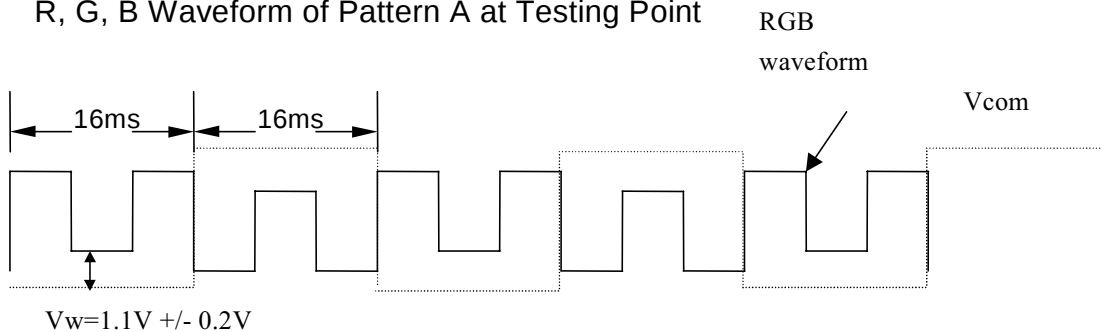


Pattern A

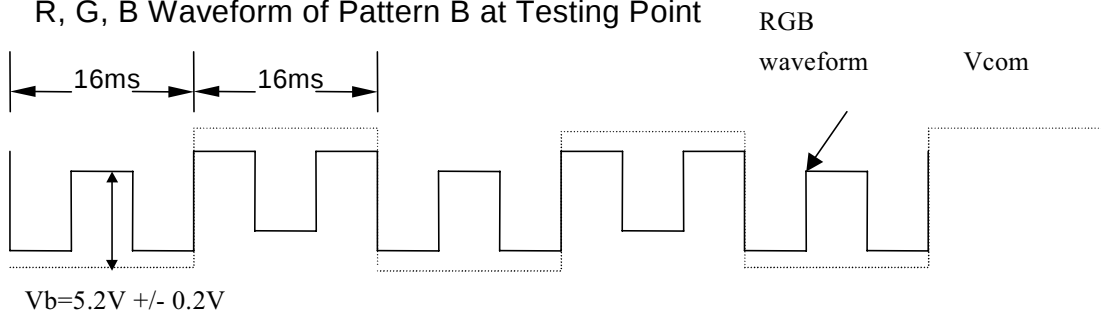


Pattern B

- R, G, B Waveform of Pattern A at Testing Point



- R, G, B Waveform of Pattern B at Testing Point



**11. Handling Cautions****11-1) Mounting of module**

- a) Please power off the module when you connect the input/output connector.
- b) Please connect the ground pattern of the inverter circuit surely. If the connection is not perfect, some following problems may happen possibly.
  - 1.The noise from the backlight unit will increase.
  - 2.The output from inverter circuit will be unstable.
  - 3.In some cases a part of module will heat.
- c) Polarizer which is made of soft material and susceptible to flaw must be handled carefully.
- d) Protective film (Laminator) is applied on surface to protect it against scratches and dirt. It is recommended to peel off the laminator before use and taking care of static electricity.

**11-2) Precautions in mounting**

- a) When metal part of the TFT-LCD module (shielding lid and rear case) is soiled, wipe it with soft dry cloth.
- b) Wipe off water drops or finger grease immediately. Long contact with water may cause discoloration or spots.
- c) TFT-LCD module uses glass which breaks or cracks easily if dropped or bumped on hard surface. Please handle with care.
- d) Since CMOS LSI is used in the module. So take care of static electricity and earth yourself when handling.

**11-3) Adjusting module**

- a) Adjusting volumes on the rear face of the module have been set optimally before shipment.
- b) Therefore, do not change any adjusted values. If adjusted values are changed, the specifications described may not be satisfied.

**11-4) Others**

- a) Do not expose the module to direct sunlight or intensive ultraviolet rays for many Hours.
- b) Store the module at a room temperature place.
- c) The voltage of beginning electric discharge may over the normal voltage because of leakage current from approach conductor by to draw lump read lead line around.
- d) If LCD panel breaks, it is possibly that the liquid crystal escapes from the panel. Avoid putting it into eyes or mouth. When liquid crystal sticks on hands, clothes or feet. Wash it out immediately with soap.
- e) Observe all other precautionary requirements in handling general electronic components.
- f) Please adjust the voltage of common electrode as material of attachment by 1 module.

## 12. Reliability

| No. | Test Item                                       | Test Condition                                                                                                             |
|-----|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 1   | High Temperature Storage Test                   | Ta = +70 °C, 240 hrs                                                                                                       |
| 2   | Low Temperature Storage Test                    | Ta = -20°C, 240 hrs                                                                                                        |
| 3   | Low Temperature Operation Test                  | Ta = 0 °C, 240 hrs                                                                                                         |
| 4   | High Temperature & High Humidity Operation Test | Ta = +60°C, 95%RH, 240 hrs                                                                                                 |
| 5   | Thermal Cycling Test (non-operating)            | -25°C → +25°C → +70°C, 200 Cycles<br>30 min    5min    30 min                                                              |
| 6   | Vibration Test (non-operating)                  | Frequency : 10 ~ 55 Hz<br>Amplitude : 1.0 mm<br>Sweep time: 11 mins<br>Test Period: 6 Cycles for each direction of X, Y, Z |
| 7   | Shock Test (non-operating)                      | 100G, 6ms<br>Direction: ±X, ±Y, ±Z<br>Cycle: 3 times                                                                       |
| 8   | Electrostatic Discharge Test (non-operating)    | 150pF, 330Ω<br>Air: ±15KV; Contact: ±8KV<br>10 times/point, 4 points/panel face                                            |

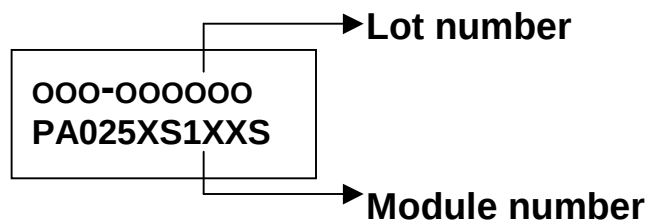
Ta: ambient temperature

### [Criteria]

Under the display quality test conditions with normal operation state, there should be no change which may affect practical display function.

## 13. Indication of Lot Number Label

a) Indicated contents of the label



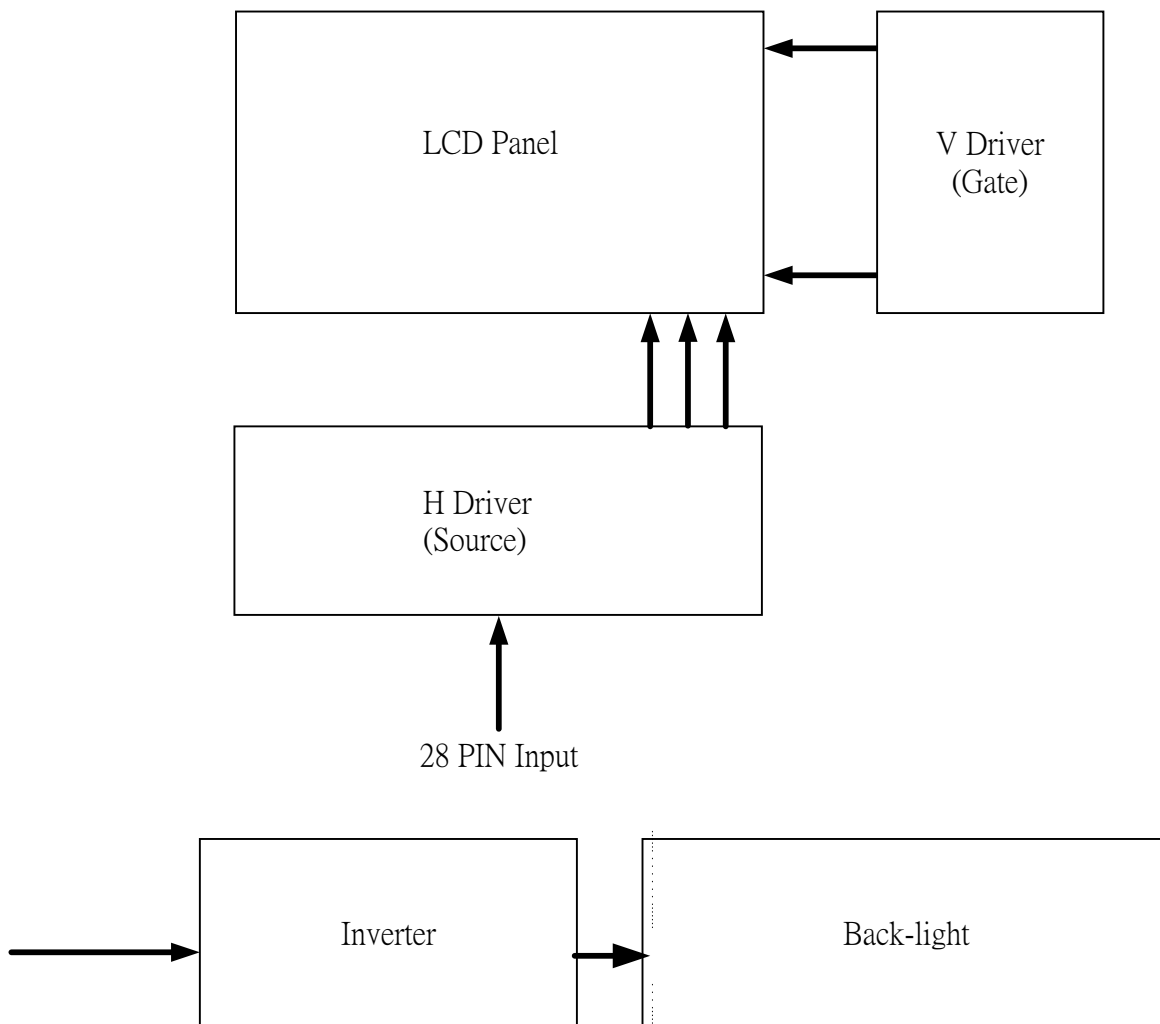
Contents of lot number : SB9—STC OEM product

5th—Production year : 1999⇒9, 2000⇒A, 2001⇒1.....

6th—Production month : 1, 2, 3,...,9, A, B, C

7th~10th—Serial numbers : 0001~9999

#### 14. Block Diagram

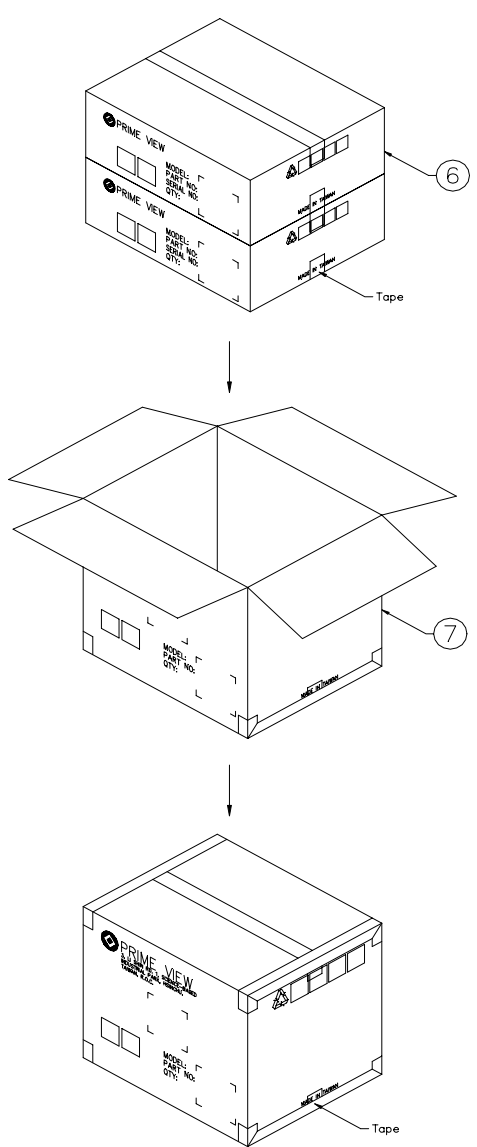


## 15. Packing

| ZONE                                                                                                                                                                                                           | REV.  | DOCUMENT NO.      | DESCRIPTION | DATE   | REV.BY                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------|-------------|--------|-------------------------|
|                                                                                                                                                                                                                |       |                   |             |        |                         |
| <p><b>NOTE:</b></p> <p>1. One layer include: 1 piece of cushion sheet, 12 pcs panel &amp; 1 piece of tray.</p> <p>2. QTY: 108 pcs panel/carton.</p> <p>3. Dimension: 455*375*190mm</p> <p>4. Weight: 6.1KG</p> |       |                   |             |        |                         |
| MTL.SPEC.                                                                                                                                                                                                      |       | UNSPECIFIED TOL'S |             | REMARK |                         |
|                                                                                                                                                                                                                |       | ANGLE             |             |        |                         |
|                                                                                                                                                                                                                |       | ROUGHNESS         |             |        |                         |
| APPROVE                                                                                                                                                                                                        |       | SCALE             | UNIT        | SHEET  | DWG.TITLE               |
| CHECK                                                                                                                                                                                                          |       |                   |             | 1 OF 2 | PA025XXXXX PACKING DWG. |
| DESIGN                                                                                                                                                                                                         | Jimmy | MTL.NO.           | PA025XXXXX  |        | DWG.NO.                 |
|                                                                                                                                                                                                                |       |                   |             |        | REV. 01                 |
|                                                                                                                                                                                                                |       |                   |             |        | A4 SIZE                 |

| ITEM | PART NO.   | DESCRIPTION           | QTY | REMARK |
|------|------------|-----------------------|-----|--------|
| 6    | 50-0100091 | CARTON INTERNAL       | 1   |        |
| 5    | 50-0500041 | 摺口袋450*380*700mm      | 1   | 抗靜電    |
| 4    | PA025XXX   |                       | 108 |        |
| 3    | 50-0200006 | EPE Cushion Sheet 2.5 | 9   | 抗靜電    |
| 2    | 50-0300441 | TRAY 2.5"             | 10  | 抗靜電    |
| 1    | 50-0300491 | EPE PLATE 430*350*15  | 2   |        |

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 Prime View International Co., Ltd.

| ZONE                                                                                                                                                                                                                                                                                                                                                                | REV.       | DOCUMENT NO.      | DESCRIPTION        | DATE   | REV. BY                 |   |            |                 |   |  |      |          |             |     |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------|--------------------|--------|-------------------------|---|------------|-----------------|---|--|------|----------|-------------|-----|--------|
| <div style="text-align: center;">  </div>                                                                                                                                                                                                                                         |            |                   |                    |        |                         |   |            |                 |   |  |      |          |             |     |        |
| <p><b>NOTE:</b></p> <p>1.Q'TY: 216pcs panel/carton.<br/> 2.Dimension: 480*396*405mm<br/> 3.Weight: 13.2KG</p>                                                                                                                                                                                                                                                       |            |                   |                    |        |                         |   |            |                 |   |  |      |          |             |     |        |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">7</td> <td style="width: 20%;">50-0100101</td> <td style="width: 55%;">CARTON EXTERNAL</td> <td style="width: 10%;">1</td> <td style="width: 10%;"></td> </tr> <tr> <td>ITEM</td> <td>PART NO.</td> <td>DESCRIPTION</td> <td>QTY</td> <td>REMARK</td> </tr> </table> |            |                   |                    |        |                         | 7 | 50-0100101 | CARTON EXTERNAL | 1 |  | ITEM | PART NO. | DESCRIPTION | QTY | REMARK |
| 7                                                                                                                                                                                                                                                                                                                                                                   | 50-0100101 | CARTON EXTERNAL   | 1                  |        |                         |   |            |                 |   |  |      |          |             |     |        |
| ITEM                                                                                                                                                                                                                                                                                                                                                                | PART NO.   | DESCRIPTION       | QTY                | REMARK |                         |   |            |                 |   |  |      |          |             |     |        |
| MTL.SPEC.                                                                                                                                                                                                                                                                                                                                                           |            | UNSPECIFIED TOL'S |                    | REMARK |                         |   |            |                 |   |  |      |          |             |     |        |
|                                                                                                                                                                                                                                                                                                                                                                     |            | ANGLE             |                    |        |                         |   |            |                 |   |  |      |          |             |     |        |
|                                                                                                                                                                                                                                                                                                                                                                     |            | ROUGHNESS         |                    |        |                         |   |            |                 |   |  |      |          |             |     |        |
| APPROVE                                                                                                                                                                                                                                                                                                                                                             |            | SCALE             | UNIT               | SHEET  | DWG.TITLE               |   |            |                 |   |  |      |          |             |     |        |
| CHECK                                                                                                                                                                                                                                                                                                                                                               |            |                   |                    | 2 OF 2 | PA025XXXXX PACKING DWG. |   |            |                 |   |  |      |          |             |     |        |
| DESIGN                                                                                                                                                                                                                                                                                                                                                              | Jimmy      | '01.06.01         | MTL.NO. PA025XXXXX |        | DWG.NO.                 |   |            |                 |   |  |      |          |             |     |        |
|                                                                                                                                                                                                                                                                                                                                                                     |            |                   |                    |        | REV. 01                 |   |            |                 |   |  |      |          |             |     |        |
|                                                                                                                                                                                                                                                                                                                                                                     |            |                   |                    |        | A4 SIZE                 |   |            |                 |   |  |      |          |             |     |        |

## Revision History

| Rev. | Issued Date   | Revised Contents                                                                                                                                                                                                                                                |
|------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.1  | Apr. 11, 2001 | NEW                                                                                                                                                                                                                                                             |
| 0.2  | Jun. 05, 2001 | Page 25,26 : Add Packing drawing                                                                                                                                                                                                                                |
| 1.0  | Oct. 18, 2001 | Page 3 : Mechanical Specifications (Weight & range)<br>Page 8 : Operating Condition (Video Signal)<br>Page 9 : Current Consumption & Backlight driving & Power Consumption<br>Add Note 8-2<br>Page 20 : Optical Characteristics<br>Page 22 : Test Configuration |
| 1.1  | Nov. 13, 2001 | Page 18,19 : Vertical timing Modify<br>Page 26,27 : Packing drawing Modify                                                                                                                                                                                      |
| 1.2  | Jan. 11, 2002 | Page 8 : Operating Condition ( $V_{CC}$ & $V_{DD}$ & $V_{GLDC}$ & $V_{EE}$ )                                                                                                                                                                                    |