JICTECH LCD (HONGKONG) CO.,LTD
DONGGUAN JICTECH LCD CO.,LTD
PROFESSIONAL LCM SUPPLIER

# TITLE :MV236FHB-N10
# Product Specification
# Rev. P0

| Customer | | Recipient's recognition | |
|---|---|---|---|
| Take charge | | Establishment | MR.HO |
| Audit | | Audit | |
| Approved | | Approved | |

# Contents

# REVISION HISTORY

(●)preliminary specification
( )Final specification

| Revision No. | Page | Description of changes | Date | Prepared |
|---|---|---|---|---|
| Rev.0 | | Initial Release | July.22,22’ | MR.HO |
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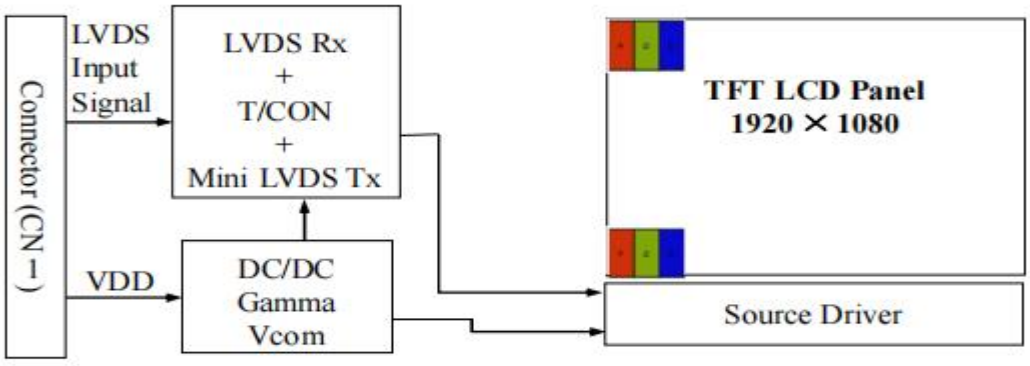
# 1.0 GENERAL DESCRIPTION

## 1.1 Introduction

MV236FHB-N10 is a color active matrix TFT LCD open cell using amorphous silicon TFT's (Thin Film Transistors) as an active switching devices. This open cell has a 23.6 inch diagonally measured active area with FHD resolutions (1920 horizontal by 1080 vertical pixel array). Each pixel is divided into RED, GREEN, BLUE dots which are arranged in vertical stripe and this open cell can display 16.7M colors. The TFT-LCD panel used for this open cell is adapted for a low reflection and higher color type.




2. General Description

2.1 Product Features

- LVDS Interface with 2 pixel / clock
- High-speed response
- 6-bit (Hi-FRC) color depth, display 16. 7M colors
- Incorporated edge type back-light (LED)
- High luminance and contrast ratio, low reflection and wide viewing angle
- DE (Data Enable) only
- RoHS/Halogen Free
- TCO 6.0 , ES 6.0 compliant
- Gamma Correction
- Reverse type

## 1.3 Application

- Desktop Type of PC & Workstation Use
- Slim-Size Display for Stand-alone Monitor
- Display Terminals for Control System
- Monitors for Process Controller

## 1.4 General Information

| Parameter | Specification | Unit | Remarks |
|---|---|---|---|
| Screen Size | 23.6 inch Diagonal | MM | |
| Number of pixels | 1920(H) ×1080(V) | pixels | |
| Pixel pitch | 0.2715(H) x 0.2715(V) | MM | |
| Pixel arrangement | RGB Vertical stripe | | |
| BLU Brightncs | 800 | Cd/㎡ | |
| Display colors | 16.7M | colors | |
| Display mode | Transmissive Mode, Normally Black | | |
| Dimensional outline | 544.8(H) × 320.5(V) × 11.8(D) typ. | | |
| Weight | | | |
| Surface Treatment | (Haze 3%), Hard coating (3H) | | |
| Back-light | 1-LED Lighting Bar type | | |

## 2.0 ABSOLUTE MAXIMUM RATINGS

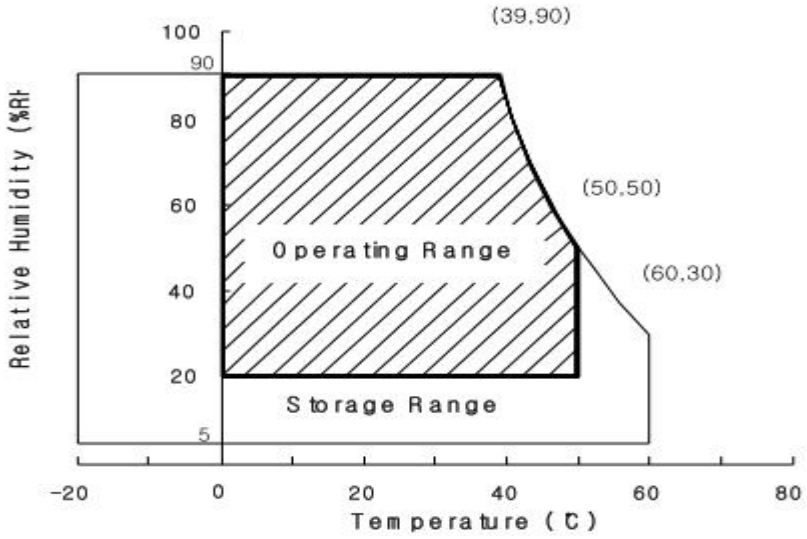
The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit. The operational and non-operational maximum voltage and current values are listed in Table 2

< Table 2. Absolute Maximum Ratings>

| Parameter | Symbol | Min. | Max. | Unit | Remarks |
|---|---|---|---|---|---|
| Power Supply Voltage | V DD | -0.3 | 5.5 | V | Ta = 25 ℃ |
| Logic Supply Voltage | V IN | VSS-0.3 | V DD +0.3 | V | |
| Operating Temperature | T OP | 0 | 50 | ℃ | 1) |
| Storage Temperature | T ST | -20 | 60 | ℃ | 1) |

Note : 1) Temperature and relative humidity range are shown in the figure below.

Wet bulb temperature should be 39 O C max. and no condensation of water.




## 3. Electrical Specifications

### 3.1 Open Cell Power Consumption (TA = 25 ± 2 °C)

| Parameter | | Symbol | Value | | | Unit | Note |
|---|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | | |
| Power Supply Voltage | | V CC | 4.5 | 5.0 | 5.5 | V | (1) |
| Rush Current | | I RUSH | - | - | 1.91 | A | (2) |
| Power Supply Current | White Pattern | I cc | - | 0.96 | 1.25 | A | (3) |
| | Horizontal Stripe | I cc | - | 1.27 | 1.66 | A | |
| | Black Pattern | I cc | - | 0.75 | 0.98 | A | |

Note:

(1) The ripple voltage should be controlled less than 10% of V CC .

(2) Measurement condition: V CC =5V, Rising time = 470μs.

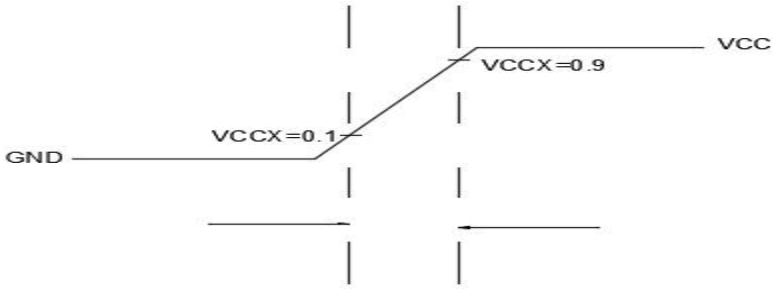
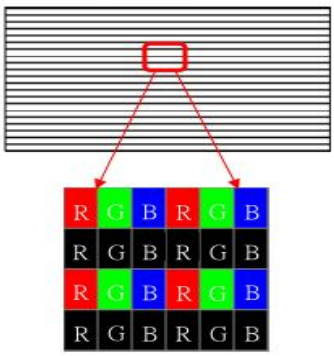



Fig. 3.1 V CC rising time condition

(3) Measurement condition: V CC = 5V, Ta = 25 ± 2ºC, F = 75 Hz. The test patterns are shown as below.

## A. White Pattern

B. Horizontal Pattern




## C. Black Pattern

Fig. 3.2 Test patterns

## 3.2 LVDS Characteristics

| Parameter | | Symbol | Value | | | Unit | Note |
|---|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | | |
| LVDS Interface | Differential Input High Threshold Voltage | V TH | +100 | - | - | MV | |
| | Differential Input Low Threshold Voltage | V TL | - | - | -100 | MV | |
| | Common Input Voltage | V CM | 1.0 | 1.2 | 1.4 | V | |
| | Differential Input Voltage | \|V ID \| | 100 | - | 600 | MV | |
| | Terminating Resistor | R T | 87.5 | 100 | 112.5 | ohm | |
| CMOS Interface | Input High Threshold Voltage | VIH | 2.7 | - | 3.3 | V | |
| | Input Low Threshold Voltage | VIL | 0 | - | 0.7 | V | |

# 4. Input Terminal Pin Assignment

## 4.1 Interface Pin Assignment

CN1: 300B30-0000RA-M4 (Starconn) or equivalent (see Note (1))

| PIN NO | Symbol | Description | Note |
|---|---|---|---|
| 1 | RO(0)N | Odd LVDS Signal- | |
| 2 | RO(0)P | Odd LVDS Signal+ | |
| 3 | RO(1)N | Odd LVDS Signal- | |

| | | | |
|---|---|---|---|
| 4 | RO(1)P | Odd LVDS Signal+ | |
| 5 | RO(2)N | Odd LVDS Signal- | |
| 6 | RO(2)P | Odd LVDS Signal+ | |
| 7 | GND | Ground | |
| 8 | ROCLK- | Odd LVDS Clock- | |
| 9 | ROCLK+ | Odd LVDS Clock + | |
| 10 | RO(3)N | Odd LVDS Signal- | |
| 11 | RO(3)P | Odd LVDS Signal+ | |
| 12 | RE(0)N | Even LVDS Signal- | |
| 13 | RE(0)P | Even LVDS Signal+ | |
| 14 | GND | Ground | |
| 15 | RE(1)N | Even LVDS Signal- | |
| 16 | RE(1)P | Even LVDS Signal+ | |
| 17 | GND | Ground | |
| 18 | RE(2)N | Even LVDS Signal- | |
| 19 | RE(2)P | Even LVDS Signal+ | |
| 20 | RECLK- | Even LVDS Clock- | |

| | | | |
|---|---|---|---|
| 21 | RECLK+ | Even LVDS Clock + | |
| 22 | RE(3)N | Even LVDS Clock- | |
| 23 | RE(3)P | Even LVDS Clock + | |
| 24 | GND | Ground | |
| 25 | WP | Write Protect (High: Write Enable, Low or Open: Write Disable ) | |
| 26 | SCL | I2C Serial Clock (for adjust VCOM) | |
| 27 | SDA | I2C Serial Clock (for adjust VCOM) | |
| 28 | 5V | DC power supply | |
| 29 | 5V | DC power supply | |
| 30 | 5V | DC power supply | |

Note:

(1) The direction of pin assignment is shown as below:

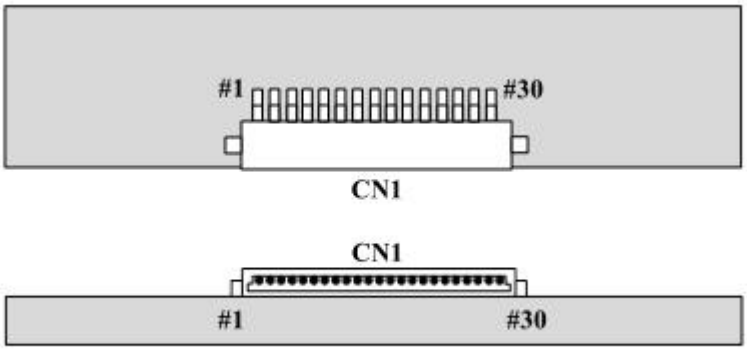



Fig. 4.1 LVDS connector direction sketch map

(2) a. Please let it open (Do not line out from PCBA connector) if it do not used.(for example：TV set )

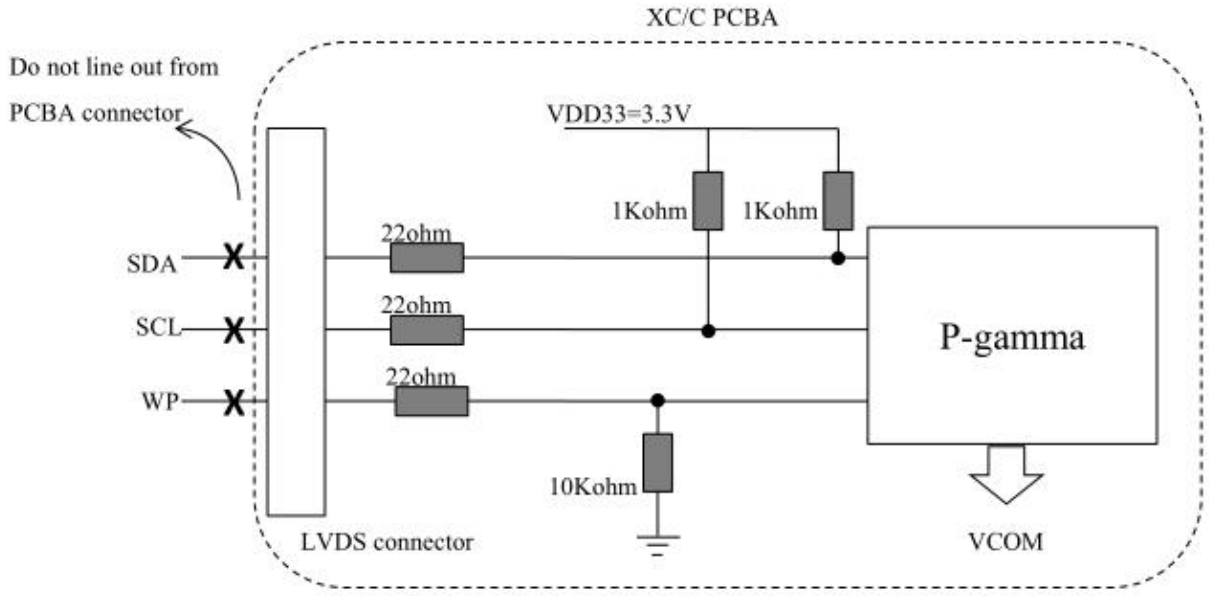



Fig. 4.2 WP/SDA/SCL PCBA set

b. For the VCOM (Flicker) regulation and control, SDA and SCL must pull high in the flicker set, and the flicker

set's VDD must ready before the input power (VCC5V)

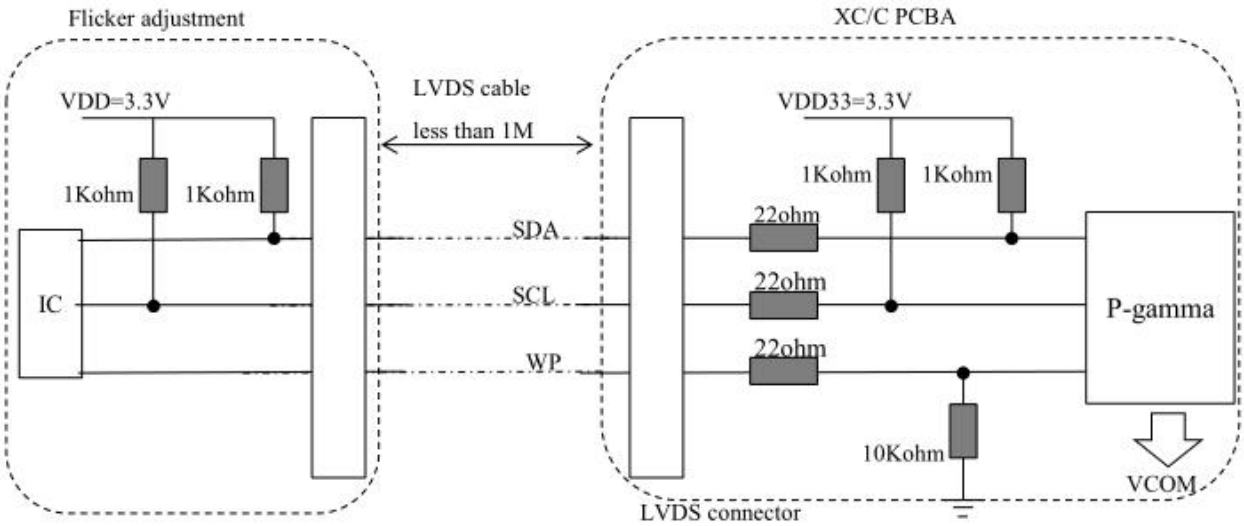



Fig. 4.3 WP/SDA/SCL flicker set

## 4.2Block Diagram of Interface

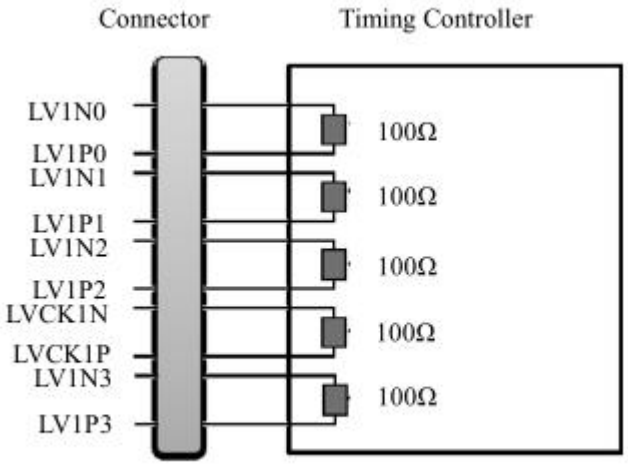
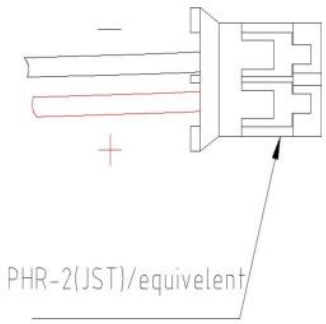


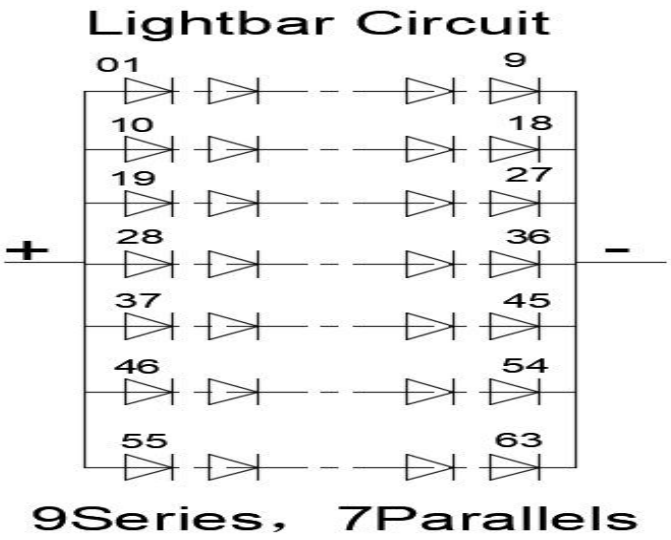

Fig. 4.4 Block diagram of interface

## 5.1 Backlight Unit

| Parameter | | Min. | Typ. | Max. | Unit | Remarks |
|---|---|---|---|---|---|---|
| LED Light Bar Input Voltage Per Input Pin | VPIN | - | 55.8 | - | V | Duty 100% |
| LED Light Bar Input Current Per Input Pin | IPIN | - | 320 | - | MA | Note1,2, |
| LED Power Consumption | P BL | - | 17.85 | - | W | Note 3 |
| LED Life-Time | - | 30000 | | | Hrs | Note 4 |

LED bar consists of 63LED packages,7 strings(parallel)*9packages(serial)
Note1: There are One light bar ,and the specified current is input LED chip 100% duty current
Note2: The sense current of each input pin is 150mA
Note3: P BL =4 Input pins*VPIN ×IPIN
Note4: The lifetime is determined as the time at which luminance of LED become 50% of the initial brightness or not normal lighting at IPIN=150mA on condition of continuous operating at 25 ±2 ℃



6.0 APPENDIX

Figure 1. Measurement Set Up

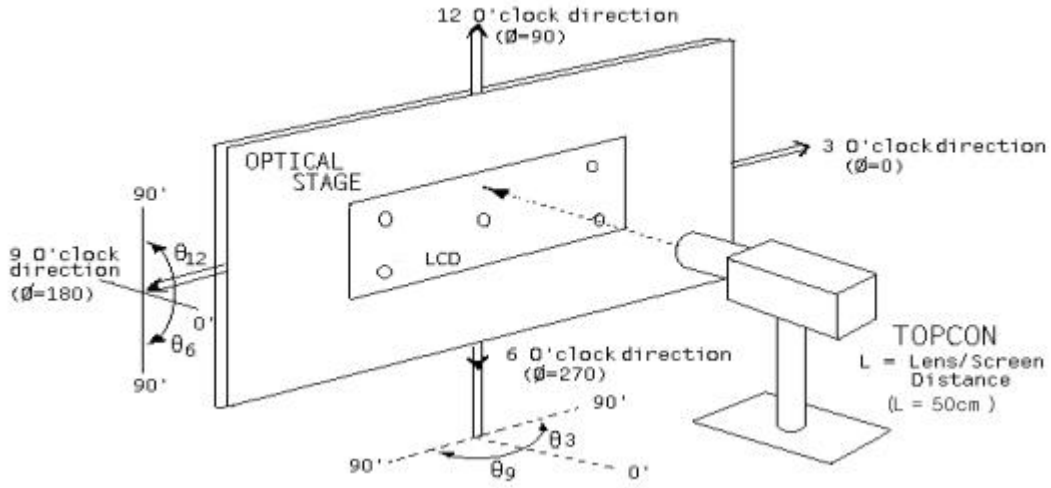



Figure 2. White Luminance and Uniformity Measurement Locations (9 points)

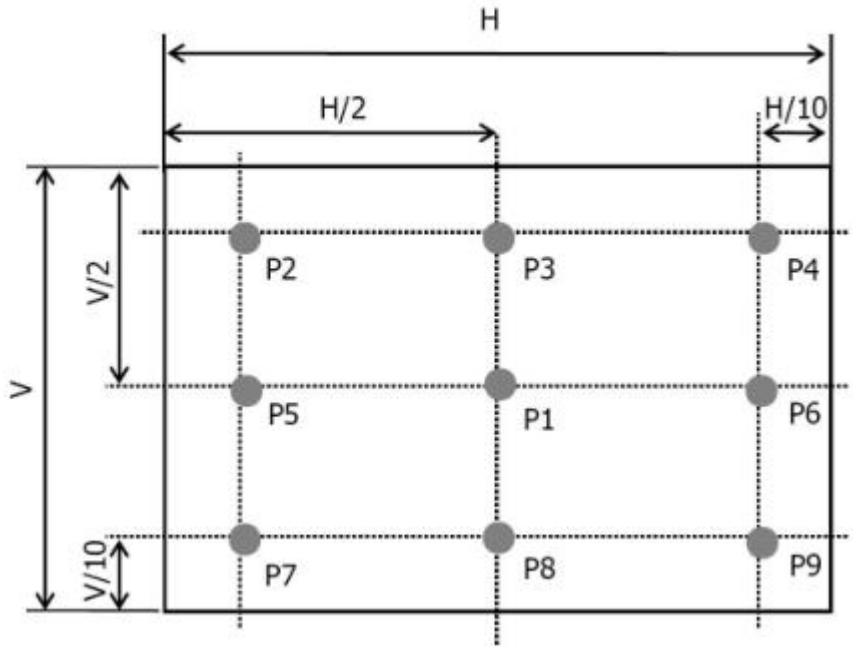


Figure 3. Response Time Testing

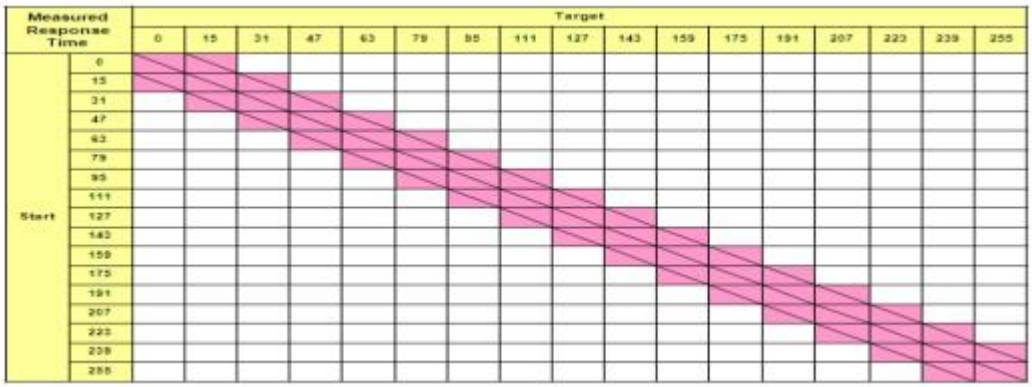
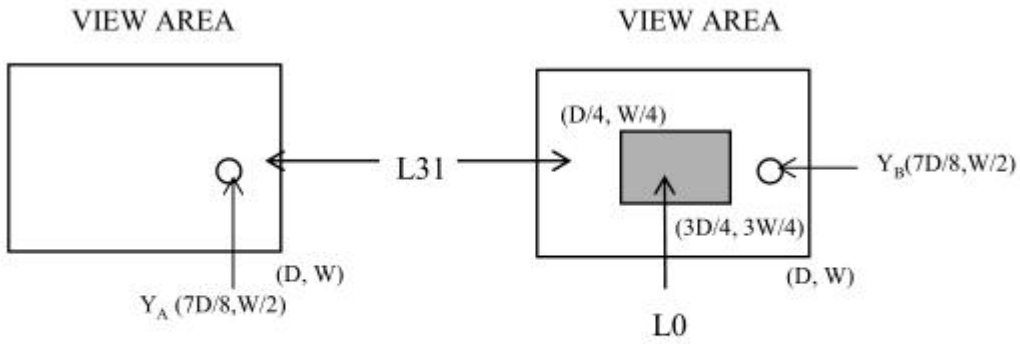



Figure 4. Cross Modulation Test Description




$$\text{Cross-Talk (\%)} = \left| \frac{Y_B - Y_A}{Y_A} \right| \times 100$$

Where: Y A = Initial luminance of measured area (cd/m 2 )

Y B = Subsequent luminance of measured area (cd/m 2 )

The location measured will be exactly the same in both patterns

Figure 5. TFT-LCD Module Outline Dimensions (Front view)

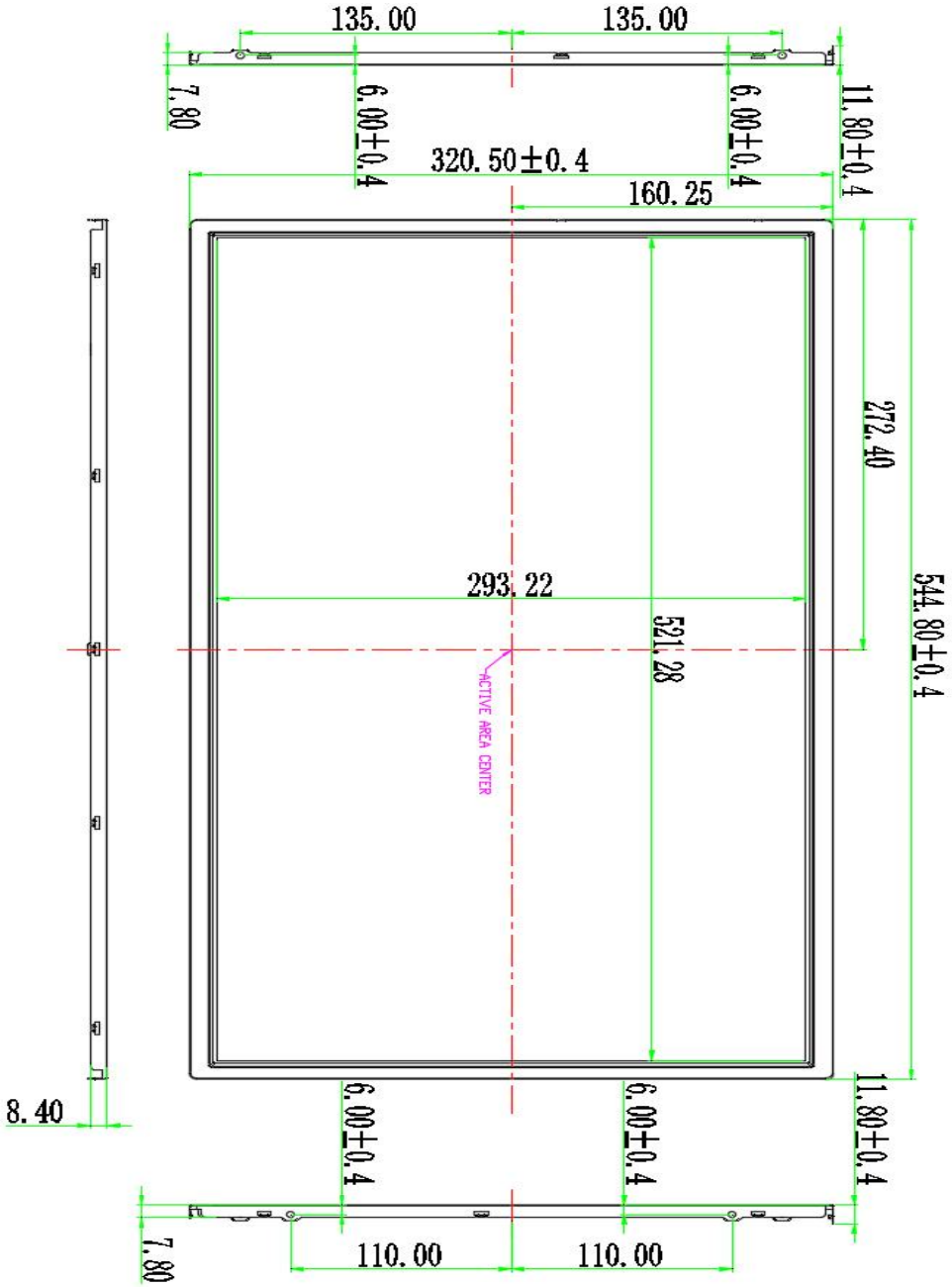
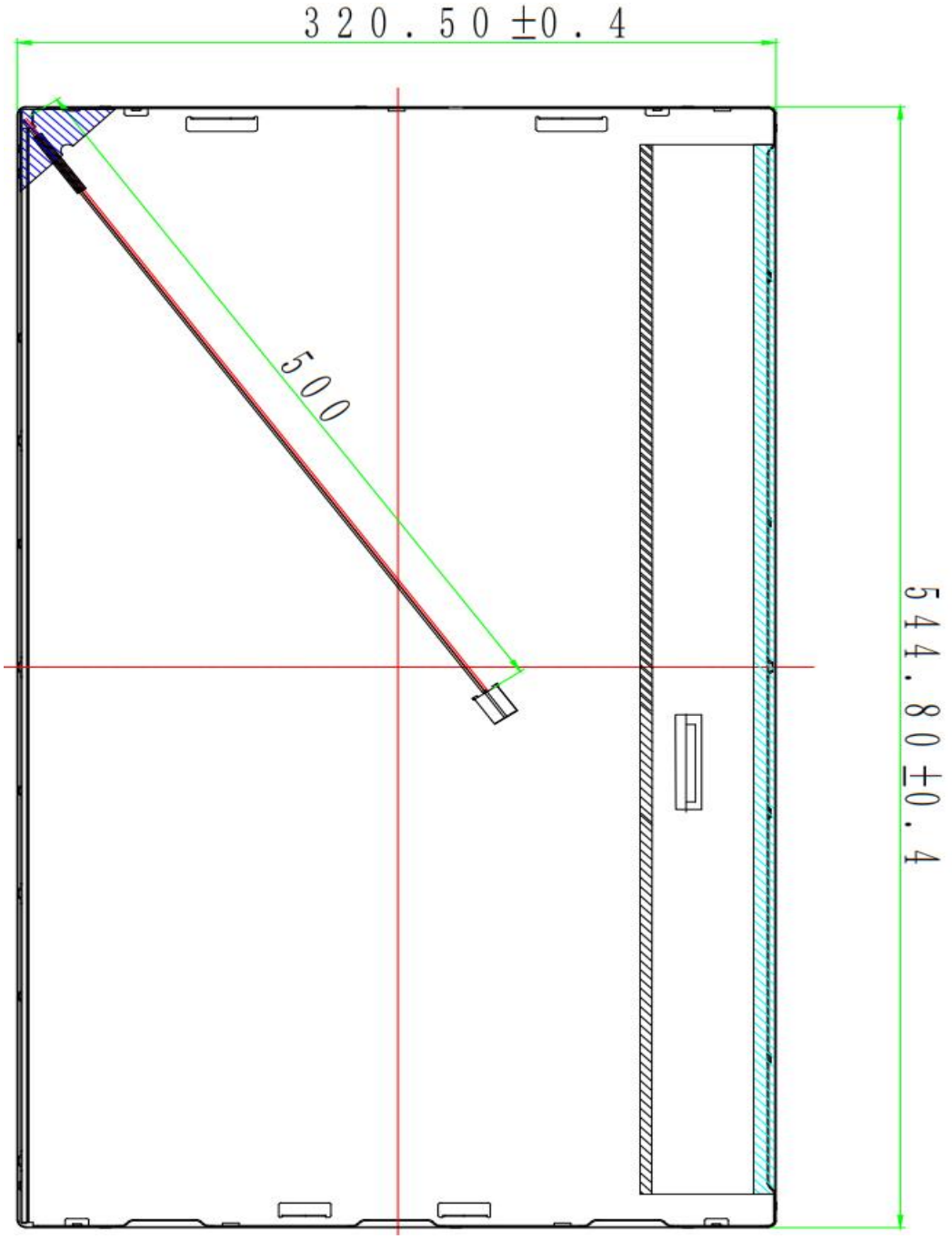
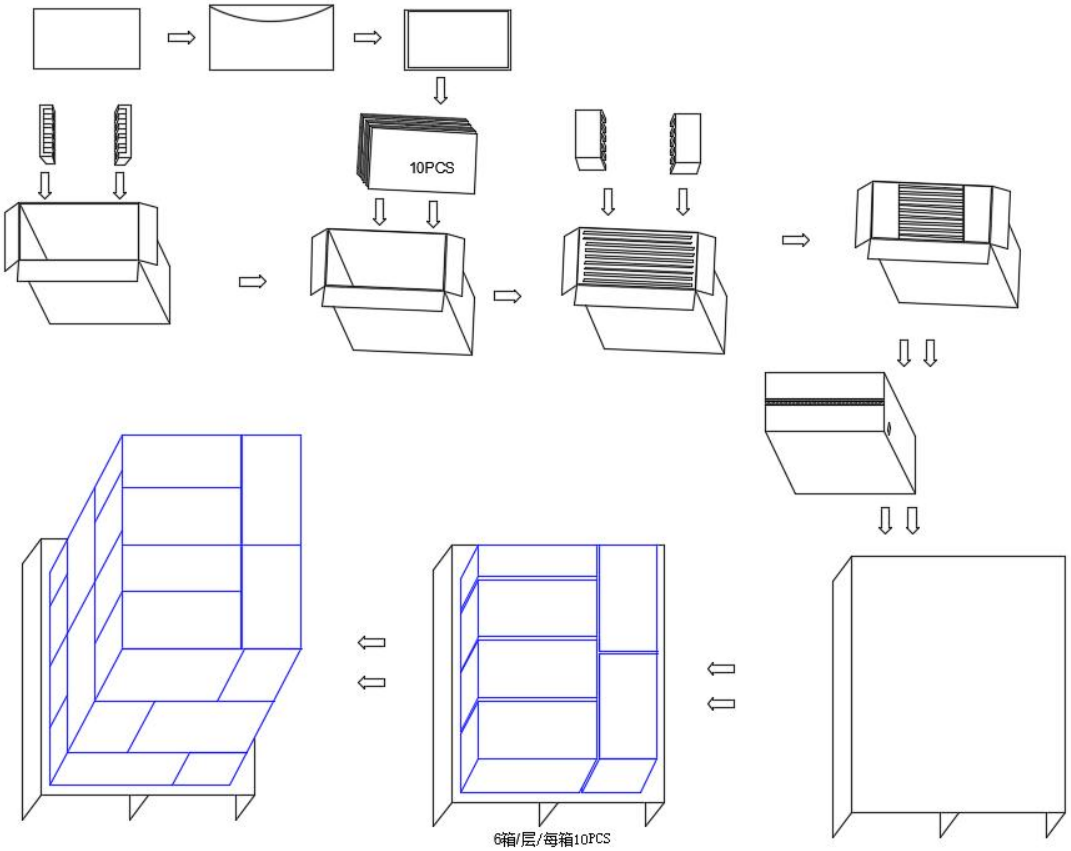


Figure 6. TFT-LCD Module Outline Dimensions (Rear view)



# 7.0 Packing

## 7.1 Packing Order



8.General Precautions

8.1Storage

1. Stor the module ina dark room where must keep at 25±10℃, 65±10%RH, the module shall be exposed under strong light such as direct sunlight.
2. Do not store the produce in surroundings containing organic solvent or corrosive gas

3. Store the module in an anti-electrostatic container or film .

8.2 Handing

1. Do not subject the module to mechanical shock or to excessive force On its surface
2. To avoid contamination on the display surface, do not touch the module Surface with bare hands
3. Must be the correct way to connec the power cable,otherwise it will Cause damage

8.3 transportation

1. In transporting,Goods are strictly prohibited during the ultra-high stacking Extrusion,upside down,entire vehicle liading and unloading.
2. Persons who handle the module should be grounded through adequate methods.

8.4 Other

1. About this specification,if any question,go through both sides agreement Post-processing.
2. Any changes must get into contant with each other,get tht agreement then To change ,and update the contents to record.