# Product Specification

AU OPTRONICS CORPORATION

B141PW01 V4

**(   ) Preliminary Specifications**
**( V ) Final Specifications**

| Module | 14.1" WXGA+ Color TFT-LCD |
|---|---|
| Model Name | B141PW01 V4 |

| Customer | Date |
|---|---|

**Checked &**
**Approved by**

Note: This Specification is subject to change without notice.

| Approved by | Date |
|---|---|

Howard Lee            2007/5/10

**Prepared by**

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NBBU Marketing Division /
AU Optronics corporation

**Product Specification**

AU OPTRONICS CORPORATION

B141PW01 V4

# Contents

# Record of Revision

| Version and Date | Page | Old description | New Description | Remark |
|---|---|---|---|---|
| 0.1 2006/10/30 | | First Edition for Customer | | |
| 1.0 2007/5/9 | 1 | Preliminary Specfications | Final Specifications | |
| | | | | |

# 1. Handling Precautions

1) Since front polarizer is easily damaged, pay attention not to scratch it.

2) Be sure to turn off power supply when inserting or disconnecting from input connector.

3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.

4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.

5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.

6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.

7) Do not open nor modify the Module Assembly.

8) Do not press the reflector sheet at the back of the module to any directions.

9) In case if a Module has to be put back into the packing container slot after once it was taken out from the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly. Otherwise the TFT Module may be damaged.

10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.

11) After installation of the TFT Module into an enclosure (Notebook PC Bezel, for example), do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside.   Otherwise the TFT Module may be damaged.

12) Cold cathode fluorescent lamp in LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.

13) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source(, IEC60950 or UL1950), or be applied exemption.

14) The LCD module is designed so that the CCFL in it is supplied by Limited Current Circuit(IEC60950 or UL1950). Do not connect the CCFL in Hazardous Voltage Circuit.

## 2. General Description

B141PW01 V4 is a Color Active Matrix Liquid Crystal Display composed of a TFT LCD panel, a driver circuit, and backlight system. The screen format is intended to support the WXGA+ (1440(H) x 900(V)) screen and 262k colors (RGB 6-bits data driver). All input signals are LVDS interface compatible. Inverter of backlight is not included.

B141PW01 V4 is designed for a display unit of notebook style personal computer and industrial machine.

## 2.1 General Specification

The following items are characteristics summary on the table at 25     condition:

| Items | Unit | Specifications |
|---|---|---|
| Screen Diagonal | [mm] | 357.7 (14.1W") |
| Active Area | [mm] | 303.48 X 189.675 |
| Pixels H x V | | 1440x3(RGB) x 900 |
| Pixel Pitch | [mm] | 0.21075X0.21075 |
| Pixel Arrangement | | R.G.B. Vertical Stripe |
| Display Mode | | Normally White |
| White Luminance ($I_{CCFL}$=6.0mA)<br>Note: $I_{CCFL}$ is lamp current | [cd/m$^2$] | 200 typ. (5 points average)<br>185 min. (5 points average)<br>(Note1) |
| Luminance Uniformity | | 1.2 max. (5 points) |
| Contrast Ratio | | 500 typ |
| Optical Rise Time/Fall Time | [msec] | 5/11 typ. |
| Nominal Input Voltage VDD | [Volt] | +3.3 typ. |
| Power Consumption | [Watt] | 5.5 typ .(without inverter) |
| Weight | [Grams] | 400 typ.(without inverter) |
| Physical Size | [mm] | 320.5(W) x 206 (H) x 5.5(D) Max. |
| Electrical Interface | | 2 channel LVDS |
| Surface Treatment | | Hard coating 3H,Glare |
| Support Color | | 262K colors ( RGB 6-bit ) |
| Temperature Range<br>  Operating<br>  Storage (Non-Operating) | [$^o$C]<br>[$^o$C] |  0 to +50<br>-20 to +60 |
| RoHS Compliance | | RoHS Compliance |

## 2.2 Optical Characteristics

The optical characteristics are measured under stable conditions at 25　(Room Temperature):

| Item | Unit | Conditions | Min. | Typ. | Max. | Note |
|---|---|---|---|---|---|---|
| White Luminance $I_{CCFL}$=6.0mA | [cd/m$^2$] | 5 points average | 185 | 200 | - | 1, 4, 5. |
| Viewing Angle | [degree] [degree] | Horizontal　(Right) CR = 10　(Left) | - - | 45 45 | - - | 8 |
| | [degree] [degree] | Vertical　(Upper) CR = 10　(Lower) | - - | 20 35 | - - | |
| Luminance Uniformity | | 5 Points | | | 1.2 | 1 |
| Luminance Uniformity | | 13 Points | | | 1.8 | 2 |
| CR: Contrast Ratio | | | 400 | 500 | - | 6 |
| Cross talk | % | | | | 1.4 | 7 |
| Response Time | [msec] | Rising | - | 5 | 6 | 8 |
| | [msec] | Falling | - | 11 | 14 | |
| | [msec] | Rising + Falling | | 16 | 20 | |
| Color / Chromaticity Coordinates (CIE 1931) | | Red x | 0.550 | 0.580 | 0.610 | 2,8 |
| | | Red y | 0.310 | 0.340 | 0.370 | |
| | | Green x | 0.280 | 0.310 | 0.340 | |
| | | Green y | 0.520 | 0.550 | 0.580 | |
| | | Blue x | 0.125 | 0.155 | 0.185 | |
| | | Blue y | 0.115 | 0.145 | 0.175 | |
| | | White x | 0.283 | 0.313 | 0.343 | |
| | | White y | 0.299 | 0.329 | 0.359 | |

Note 1: 5 points position (Display area : 303.48mm x 189.675mm)
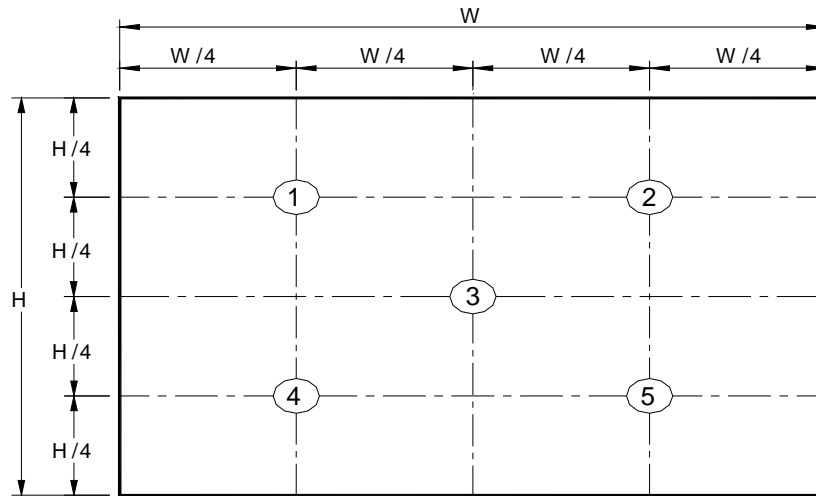


Note 2: 13 points position
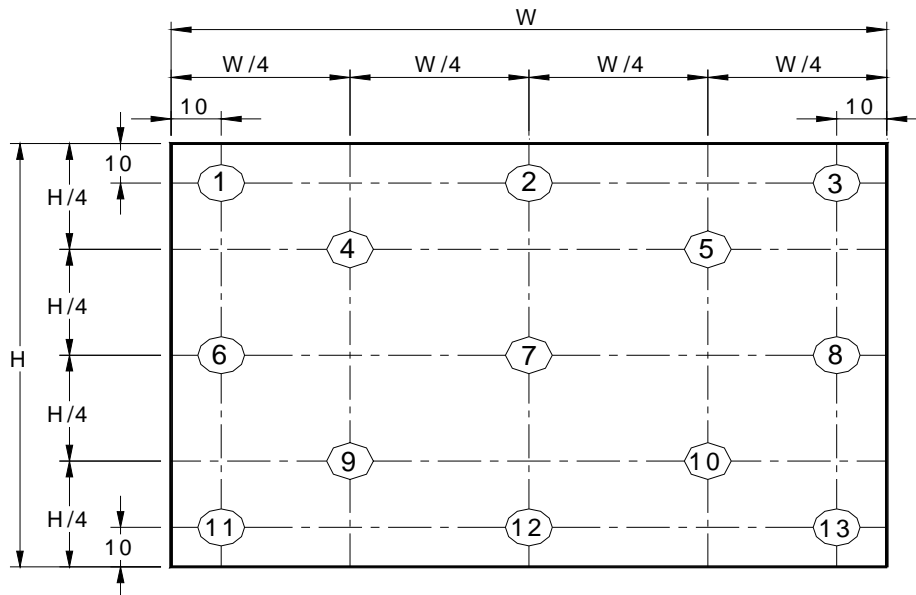


Note 3: The luminance uniformity of 5 and 13 points is defined by dividing the maximum luminance values by the minimum test point luminance

$$W5 = \frac{\text{Maximum Brightness of five points}}{\text{Minimum Brightness of five points}}$$

$$W13 = \frac{\text{Maximum Brightness of thirteen points}}{\text{Minimum Brightness of thirteen points}}$$

Note 4: Measurement method

The LCD module should be stabilized at given temperature for 30 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 30 minutes in a stable, windless and dark room.

Photo detector

Field=2°

50 cm

LCD Panel

TFT-LCD Module

Center of the screen
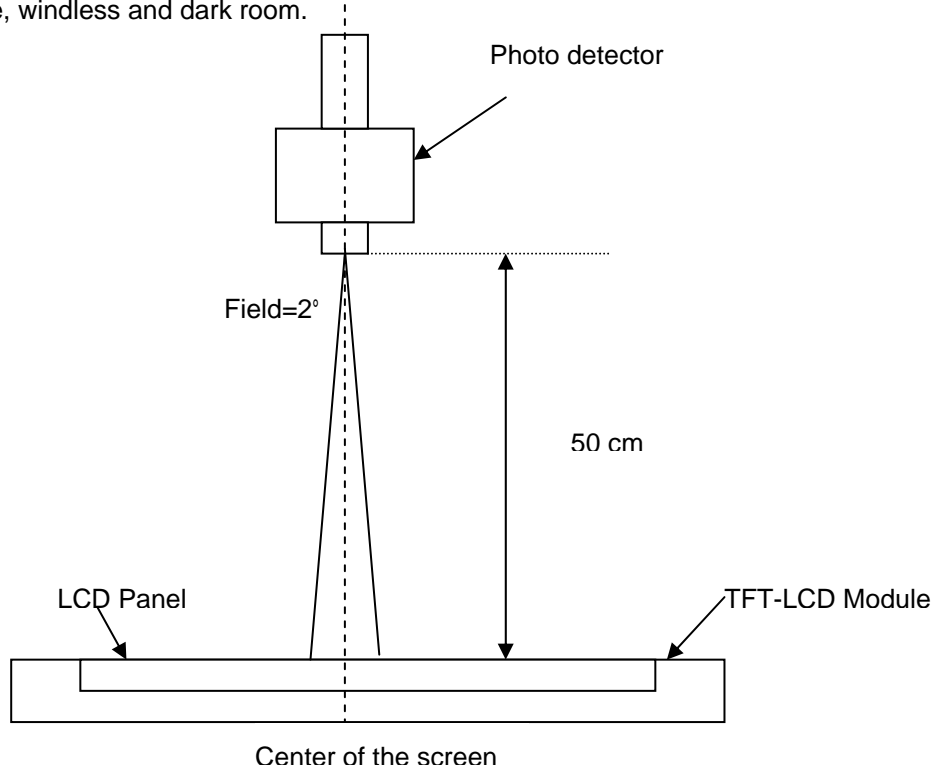
Note 5     Definition of Average Luminance of White ($Y_L$):

Measure the luminance of gray level 63 at 5 points     $Y_L = [L (1)+ L (2)+ L (3)+ L (4)+ L (5)] / 5$

L (x) is corresponding to the luminance of the point X at Figure in Note (1).

Note 6     Definition of contrast ratio:

Contrast ratio is calculated with the following formula.

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the "White" state}}{\text{Brightness on the "Black" state}}$$
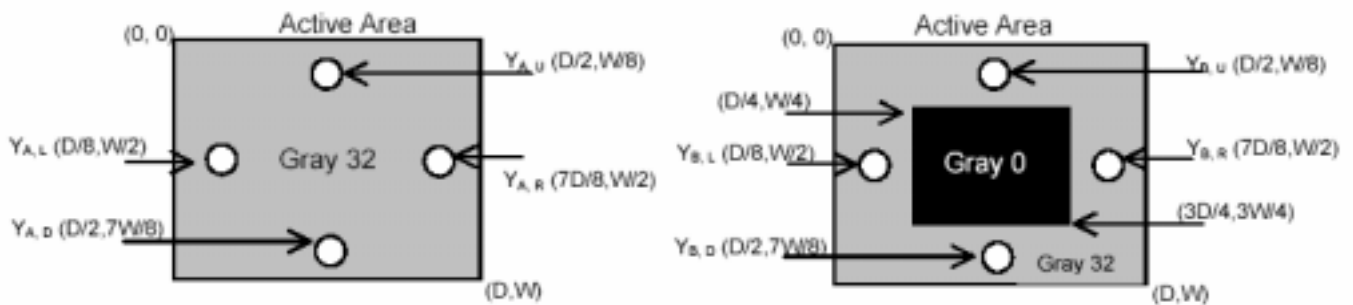
Note 7    Definition of Cross Talk (CT)

$CT = |Y_B - Y_A| / Y_A \times 100$ (%)

Where

$Y_A$ = Luminance of measured location without gray level 0 pattern (cd/m2)

$Y_B$ = Luminance of measured location with gray level 0 pattern (cd/m2)



Note 8: Definition of response time:

The output signals of BM-7 or equivalent are measured when the input signals are changed from "Black" to "White" (falling time) and from "White" to "Black" (rising time), respectively. The response time interval between the 10% and 90% of amplitudes. Refer to figure as below.
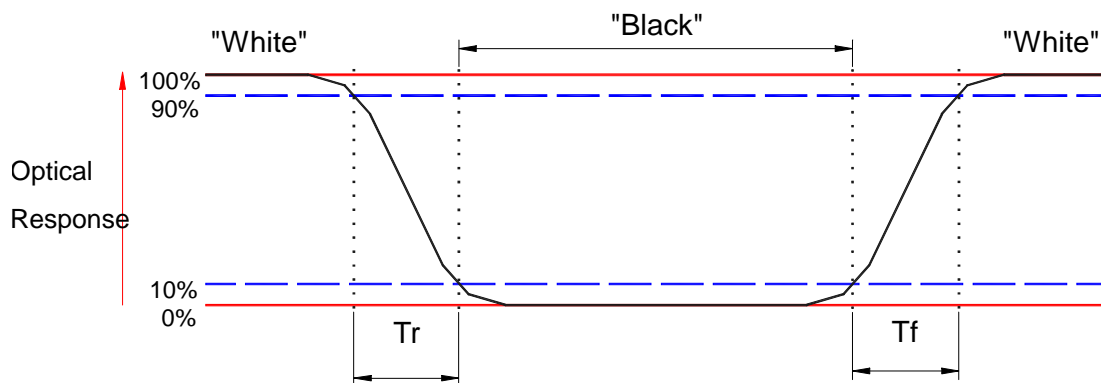
Note 8. Definition of viewing angle

Viewing angle is the measurement of contrast ratio 10, at the screen center, over a 180° horizontal and 180° vertical range (off-normal viewing angles). The 180° viewing angle range is broken down as follows; 90° (  ) horizontal left and right and 90° (  ) vertical, high (up) and low (down). The measurement direction is typically perpendicular to the display surface with the screen rotated about its center to develop the desired measurement viewing angle.
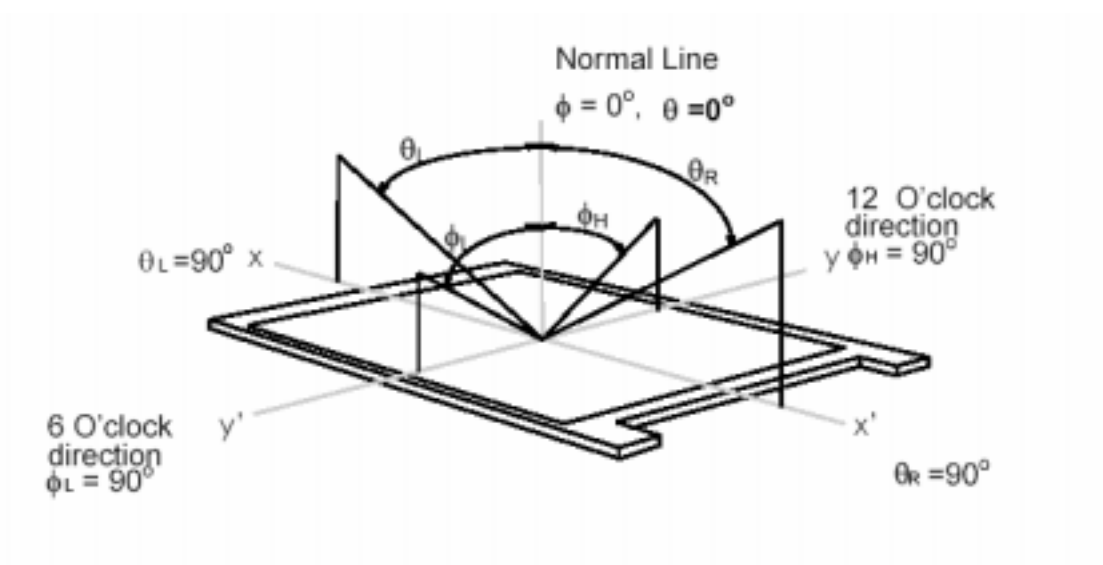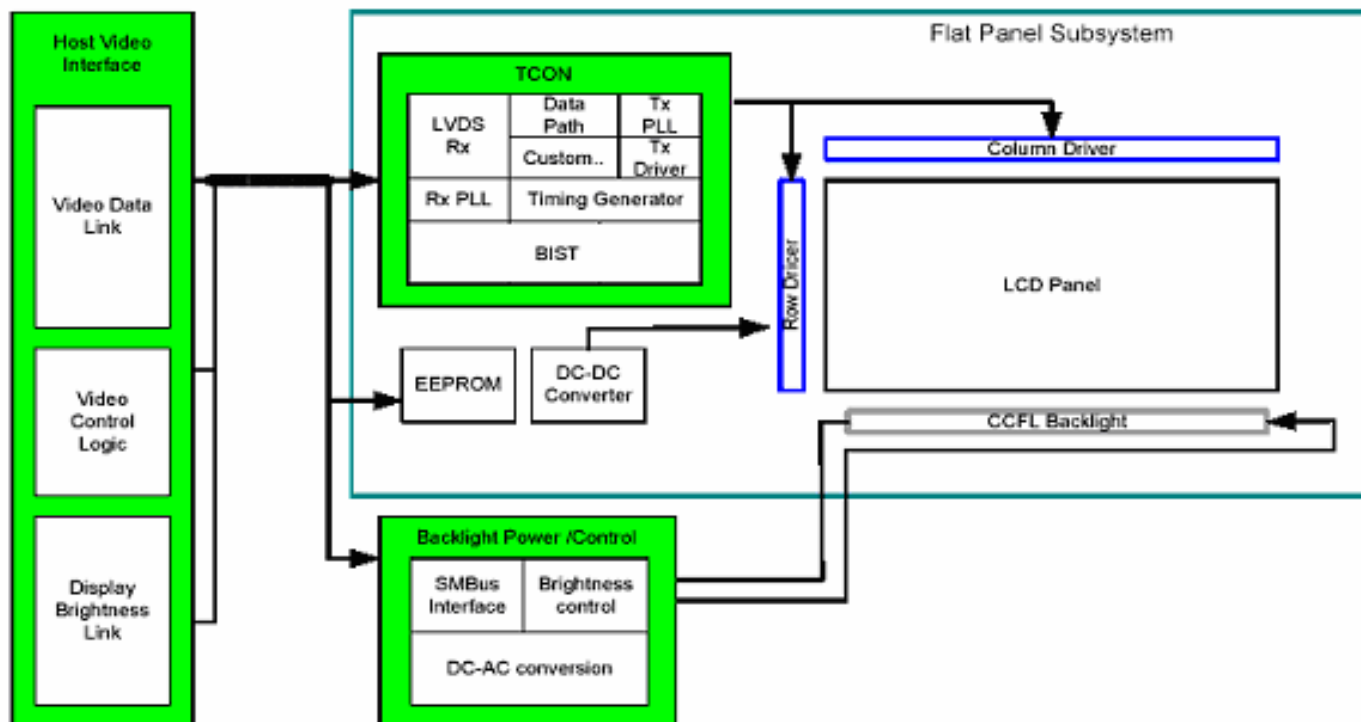
## 3. Functional Block Diagram

The following diagram shows the functional block of the 14.1 inches wide Color TFT/LCD Module:

## 4. Absolute Maximum Ratings

Absolute maximum ratings of the module are as following:

### 4.1 Absolute Ratings of TFT LCD Module

| Item | Symbol | Min | Max | Unit | Conditions |
|---|---|---|---|---|---|
| Logic/LCD Drive Voltage | Vin | -0.3 | +4.0 | [Volt] | Note 1,2 |

### 4.2 Absolute Ratings of Backlight Unit

| Item | Symbol | Min | Max | Unit | Conditions |
|---|---|---|---|---|---|
| CCFL Current | ICCFL | 2.5 | 7 | [mA] rms | Note 1,2 |

### 4.3 Absolute Ratings of Environment

| Item | Symbol | Min | Max | Unit | Conditions |
|---|---|---|---|---|---|
| Operating Temperature | TOP | 0 | +50 | [$^{o}$C] | Note 3 |
| Operation Humidity | HOP | 5 | 95 | [%RH] | Note 3 |
| Storage Temperature | TST | -20 | +60 | [$^{o}$C] | Note 3 |
| Storage Humidity | HST | 5 | 95 | [%RH] | Note 3 |

Note 1: At Ta (25    )

Note 2: Permanent damage to the device may occur if exceed maximum values

Note 3: For quality performance, please refer to AUO IIS(Incoming Inspection Standard).
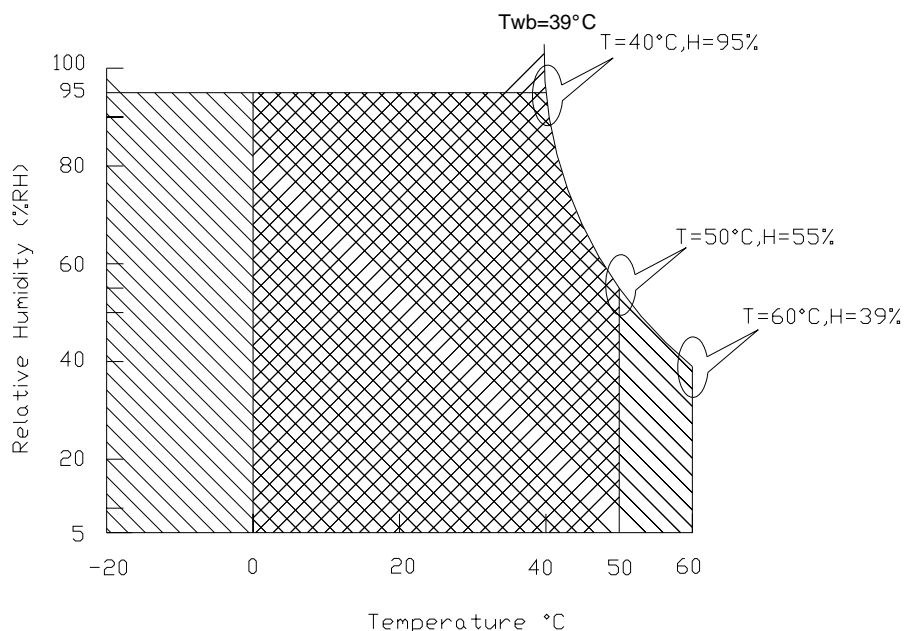


Operating Range      Storage Range
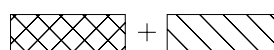
## 5. Electrical characteristics

### 5.1 TFT LCD Module

#### 5.1.1 Power Specification

Input power specifications are as follows;

| Symble | Parameter | Min | Typ | Max | Units | Note |
|--------|-----------|-----|-----|-----|-------|------|
| VDD | Logic/LCD Drive Voltage | 3.0 | 3.3 | 3.6 | [Volt] | |
| PDD | VDD Power | | 1.3 | | [Watt] | Note 1 |
| IDD | IDD Current | | 391 | 433 | [mA] | Note 1 |
| IRush | Inrush Current | | | 430 | [mA] | Note 2 |
| VDDrp | Allowable Logic/LCD Drive Ripple Voltage | | | 100 | [mV] p-p | |

Note 1 : Maximum Measurement Condition    Mosaic Pattern

Note 2    Measure Condition
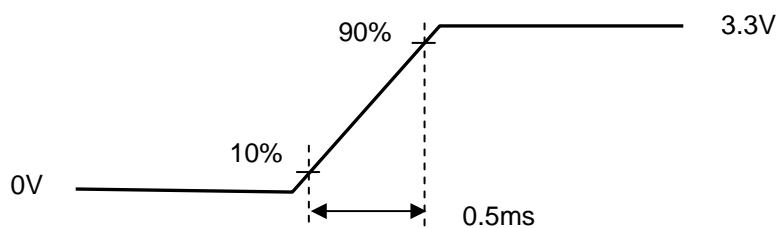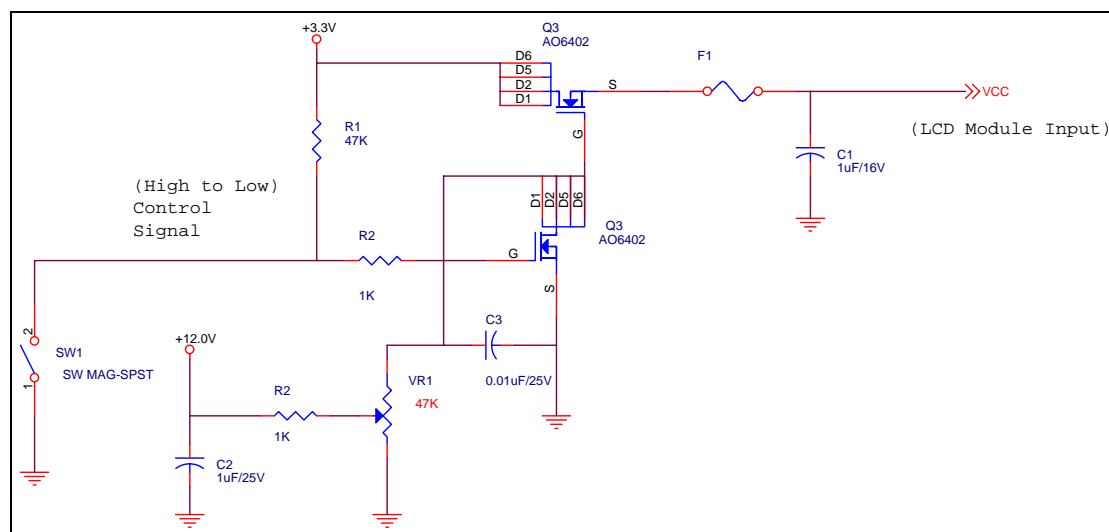




**Vin rising time**

### 5.1.2 Signal Electrical Characteristics

Input signals shall be low or High-impedance state when VDD is off.

It is recommended to refer the specifications of SN75LVDS86DGG (Texas Instruments)in detail.

Signal electrical characteristics are as follows;

| Parameter | Condition | Min | Max | Unit |
|-----------|-----------|-----|-----|------|
| Vth | Differential Input High Threshold (Vcm=+1.2V) | | 100 | [mV] |
| Vtl | Differential Input Low Threshold (Vcm=+1.2V) | -100 | | [mV] |
| Vcm | Differential Input Common Mode Voltage | 1.125 | 1.375 | [V] |

Note: LVDS Differential Voltage
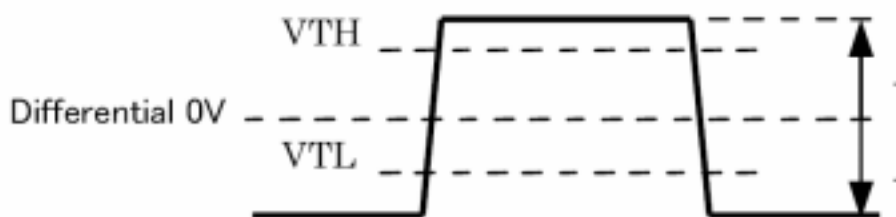
## 5.2 Backlight Unit

Parameter guideline for CCFL Inverter

| Parameter | Min | Typ | Max | Units | Condition |
|-----------|-----|-----|-----|-------|-----------|
| White Luminance 5 points average | 185 | 200 | - | [cd/m$^2$] | (Ta=25 ) |
| CCFL current($I_{CCFL}$) | 2.5 | 6.0 | 7 | [mA] rms | (Ta=25 ) Note 2 |
| CCFL Frequency($F_{CCFL}$) | 50 | 60 | 65 | [KHz] | (Ta=25 ) Note 3,4 |
| CCFL Ignition Voltage(Vs) | - | 1000 | 1200 | [Volt] rms | (Ta= 0 ) Note 5 |
| CCFL Voltage (Reference) ($V_{CCFL}$) | - | 650 | - | [Volt] rms | (Ta=25 ) Note 6 |
| CCFL Power consumption ($P_{CCFL}$) | - | 4.2 | - | [Watt] | (Ta=25 ) Note 6 |

Note 1: Typ are AUO recommended Design Points.

*1 All of characteristics listed are measured under the condition using the AUO Test inverter.

*2 In case of using an inverter other than listed, it is recommended to check the inverter carefully. Sometimes, interfering noise stripes appear on the screen, and substandard luminance or flicker at low power may happen.

*3 In designing an inverter, it is suggested to check safety circuit very carefully. Impedance of CCFL, for instance, becomes more than 1 [M ohm] when CFL is damaged.

*4 Generally, CCFL has some amount of delay time after applying kick-off voltage. It is recommended to keep on applying kick-off voltage for 1 [Sec] until discharge.

*5 CCFL discharge frequency must be carefully chosen so as not to produce interfering noise stripes on the screen.

*6 Reducing CCFL current increases CCFL discharge voltage and generally increases CCFL discharge frequency. So all the parameters of an inverter should be carefully designed so as not to produce too much leakage current from high-voltage output of the inverter.

Note 2: It should be employed the inverter which has "Duty Dimming", if ICCFL is less than 4mA.

Note 3: CCFL discharge frequency should be carefully determined to avoid interference between inverter and TFT LCD.

Note 4: The frequency range will not affect to lamp life and reliability characteristics.

Note 5: CCFL inverter should be able to give out a power that has a generating capacity of over 1,430 voltage. Lamp units need 1,400 voltage minimum for ignition.

Note 6: Calculator value for reference (I$_{CCFL}$×V$_{CCFL}$=P$_{CCFL}$)

Note 7: Requirements for a system inverter design, which is intended to have a better display performance, a better power efficiency and a more reliable lamp, are following.

It shall help increase the lamp lifetime and reduce leakage current.

a. The asymmetry rate of the inverter waveform should be less than 10%.

b. The distortion rate of the waveform should be within    2 ±10%.

* Inverter output waveform had better be more similar to ideal sine wave.
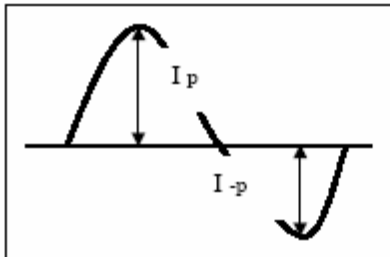
* Asymmetry rate:

$$| I_p - I_{-p} | / I_{rms} * 100\%$$

* Distortion rate

$$I_p \ (or \ I_{-p}) / I_{rms}$$

## 6. Signal Characteristic

## 6.1 Pixel Format Image

Following figure shows the relationship of the input signals and LCD pixel format.

## 6.2 The input data format



## 6.3 Signal Description/Pin Assignment

LVDS is a differential signal technology for LCD interface and high speed data transfer device.

| Signal Name | Description |
|---|---|
| V$_{EDID}$ | +3.3V EDID Power |
| CLK$_{EDID}$ | EDID Clock Input |
| DATA$_{EDID}$ | EDID Data Input |
| ORXIN0-, ORXIN0+ | Odd LVDS differential data input(ORed0-ORed5, OGreen0) |
| ORXIN1-, ORXIN1+ | Odd LVDS differential data input(OGreen1-OGreen5, OBlue0-OBlue1) |
| ORXIN2-, ORXIN2+ | Odd LVDS differential data input(OBlue2-OBlue5, Hsync, Vsync, DE) |
| ORXCLKIN-, ORXCLKIN+ | Odd LVDS differential clock input |
| ERXIN0-, ERXIN0+ | Even LVDS differential data input(ERed0-ERed5, EGreen0) |
| ERXIN1-, ERXIN1+ | Even LVDS differential data input(EGreen1-EGreen5, EBlue0-EBlue1) |
| ERXIN2-, ERXIN2+ | Even LVDS differential data input(EBlue2-EBlue5) |
| ERXCLKIN-, ERXCLKIN+ | Even LVDS differential clock input |
| VDD | +3.3V Power Supply |
| GND | Ground |

| Pin no | Symbol | Function | Etc. |
|--------|--------|----------|------|
| 1 | GND | Ground | |
| 2 | VDD | Power supply ,3.3 V (typical) | |
| 3 | VDD | Power supply ,3.3 V (typical) | |
| 4 | $V_{EDID}$ | DDC 3.3V power | |
| 5 | NC | No Connection (Reserved for AUO) test | |
| 6 | $CLK_{EDID}$ | DDC Clock | |
| 7 | $Data_{EDID}$ | DDC data | |
| 8 | Odd_RxIN0- | -LVDS differential data input | |
| 9 | Odd_RxIN0+ | +LVDS differential data input | |
| 10 | GND | Ground | |
| 11 | Odd_RxIN1- | -LVDS differential data input | |
| 12 | Odd_RxIN1+ | +LVDS differential data input | |
| 13 | GND | Ground | |
| 14 | Odd_RxIN2- | -LVDS differential data input | |
| 15 | Odd_RxIN2+ | +LVDS differential data input | |
| 16 | GND | Ground | |
| 17 | Odd_RxCLKIN- | -LVDS differential clock input | |
| 18 | Odd_RxCLKIN+ | +LVDS differential clock input | |
| 19 | GND | Ground | |
| 20 | Even_RxIN0- | -LVDS differential data input | |
| 21 | Even_RxIN0+ | +LVDS differential data input | |
| 22 | GND | Ground | |
| 23 | Even_RxIN1- | -LVDS differential data input | |
| 24 | Even_RxIN1+ | +LVDS differential data input | |
| 25 | GND | Ground | |
| 26 | Even_RxIN2- | -LVDS differential data input | |
| 27 | Even_RxIN2+ | +LVDS differential data input | |
| 28 | GND | Ground | |
| 29 | Even_RxCLKIN- | -LVDS differential clock input | |
| 30 | Even_RxCLKIN+ | +LVDS differential clock input | |

Note1: Start from right side

**Connector**

**30**

**1**

**NC**

**GND**
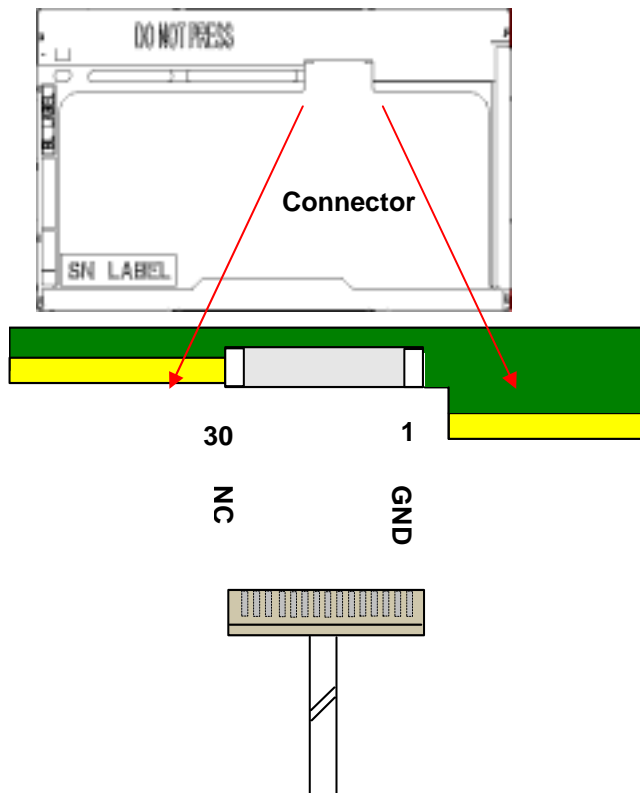
Note2: Input signals shall be low or High-impedance state when VDD is off.
  internal circuit of LVDS inputs are as following.
  The module uses a 100ohm resistor between positive and negative data lines of each receiver input

**Signal Input**

**LVDS Receiver**

Pin No.

| 8 | RxIN0- |
| 9 | RxIN0+ |
| 11 | RxIN1- |
| 12 | RxIN1+ |
| 14 | RxIN2- |
| 15 | RxIN2+ |
| 17 | RxCLKIN- |
| 18 | RxCLKIN+ |

R

R

R

R
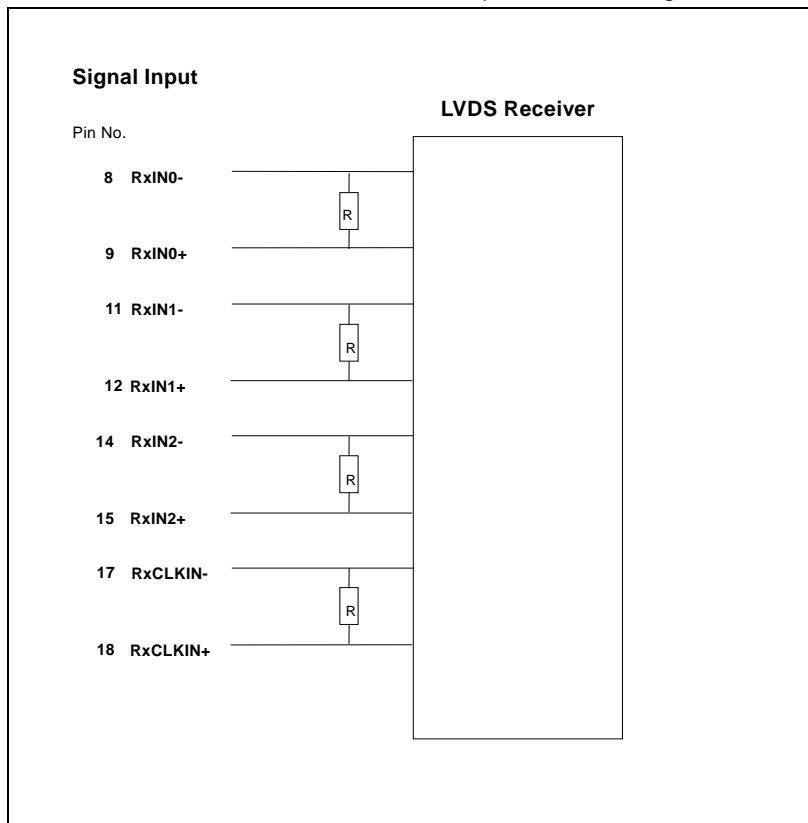
## 6.4 Interface Timing

### 6.4.1 Timing Characteristics

Basically, interface timings should match the 1440x900 /60Hz    manufacturing guide line timing.

| Parameter | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Frame Rate | | - | 50 | 60 | - | Hz |
| Clock frequency | | $1/T_{Clock}$ | - | 48.2 | - | MHz |
| Vertical Section | Period | $T_V$ | 904 | 912 | 2048 | $T_{Line}$ |
| | Active | $T_{VD}$ | 900 | 900 | 900 | |
| | Blanking | $T_{VB}$ | 4 | 12 | - | |
| Horizontal Section | Period | $T_H$ | 760 | 880 | 1024 | $T_{Clock}$ |
| | Active | $T_{HD}$ | 720 | 720 | 720 | |
| | Blanking | $T_{HB}$ | 40 | 160 | - | |

Note : DE mode only

### 6.4.2 Timing diagram

**Input Timing Definition**
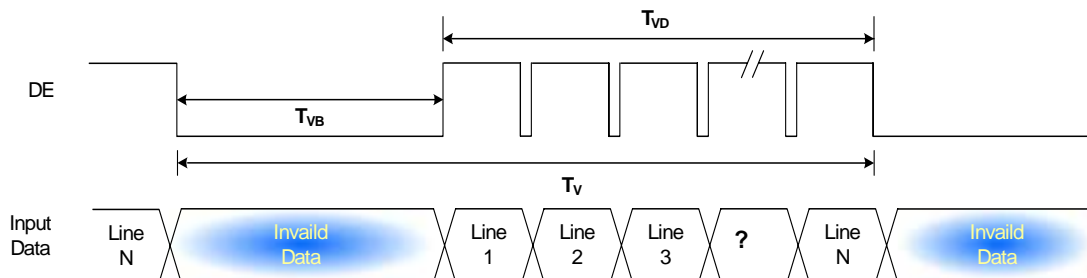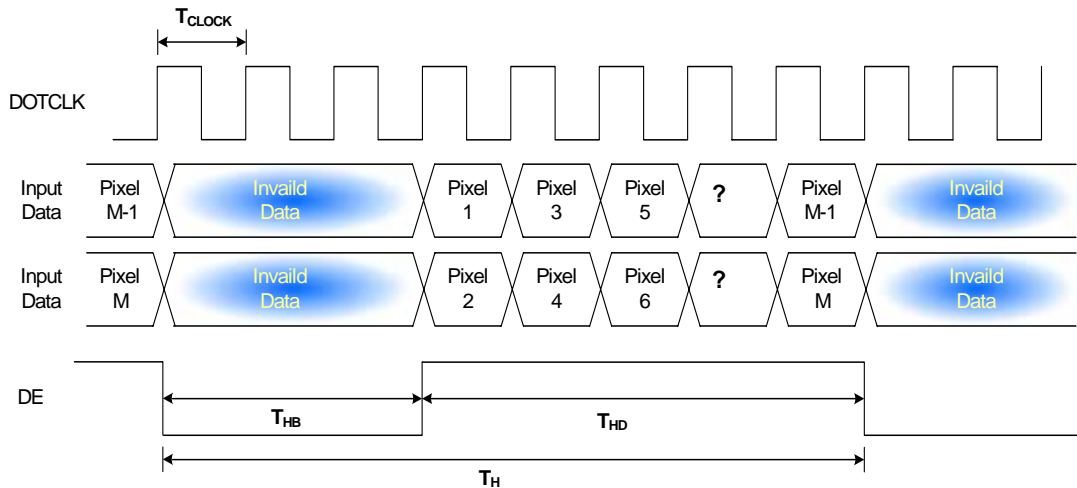
## 6.5 Power ON/OFF Sequence

VDD power and lamp on/off sequence is as follows. Interface signals are also shown in the chart. Signals from any system shall be Hi-Z state or low level when VDD is off.
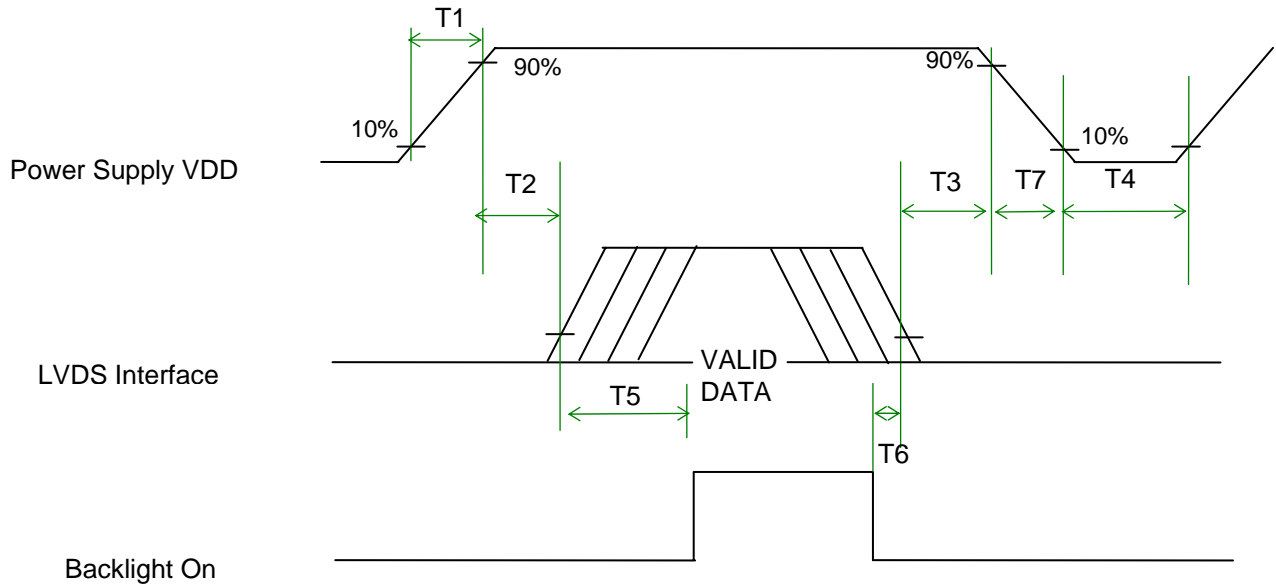


**Power Sequence Timing**

| Parameter | Value | | | Units |
|-----------|-------|------|------|-------|
|           | Min.  | Typ. | Max. |       |
| T1        | 0.5   | -    | 10   | (ms)  |
| T2        | 0     | -    | 50   | (ms)  |
| T3        | 0     | -    | 50   | (ms)  |
| T4        | 200   | -    | -    | (ms)  |
| T5        | 200   | -    | -    | (ms)  |
| T6        | 0     | -    | -    | (ms)  |
| T7        | 0     | -    | 10   | (ms)  |

# 7. Connector Description

Physical interface is described as for the connector on module.

These connectors are capable of accommodating the following signals and will be following components.

## 7.1 TFT LCD Module

| Connector Name / Designation | For Signal Connector |
|---|---|
| Manufacturer | JAE or compatible |
| Type / Part Number | FI-XB30SL-HF10 or compatible |
| Mating Housing/Part Number | FI-X30H or compatible |

## 7.2 Backlight Unit

Physical interface is described as for the connector on module.

These connectors are capable of accommodating the following signals and will be following components.

| Connector Name / Designation | For Lamp Connector |
|---|---|
| Manufacturer | JST |
| Type / Part Number | BHSR-02VS-1 |
| Mating Type / Part Number | SM02B-BHSS-1-TB |

## 7.3 Signal for Lamp connector

| Pin # | Cable color | Signal Name |
|---|---|---|
| 1 | Pink | Lamp High Voltage |
| 2 | White | Lamp Low Voltage |

# 8. Vibration and Shock Test

## 8.1 Vibration Test

**Test Spec:**

- Test method:     Non-Operation
- Acceleration:     2.16G
- Frequency:     10 - 500Hz Random
- Sweep:     30 Minutes each Axis (X, Y, Z)

## 8.2 Shock Test Spec:

**Test Spec:**

- Test method:     Non-Operation
- Acceleration:     240 G , Half sine wave
- Active time:     2 ms
- Pulse:     X,Y,Z .one time for each side

## 9. Reliability

| Items | Required Condition | Note |
|-------|-------------------|------|
| Temperature Humidity Bias | 40 /90%,300Hr | |
| High Temperature Operation | 60 /Dry,300Hr | |
| Low Temperature Operation | 0 ,300Hr | |
| On/Off Test | 25 , ON/30 sec. OFF/30sec., 10,000 cycles) | |
| Hot Storage | 60 /35% RH ,250 hours | |
| Cold Storage | -20 /50% RH ,250 hours | |
| Thermal Shock Test | -20 /30 min ,60 /30 min 100cycles | |
| Hot Start Test | 50 /1 Hr min. power on/off per 5 minutes, 5 times | |
| Cold Start Test | 0 /1 Hr min. power on/off per 5 minutes, 5 times | |
| Shock Test (Non-Operating) | 240G, 2ms, Half-sine wave | |
| Vibration Test (Non-Operating) | Random vibration, 2.16 G zero-to-peak, 10 to 500 Hz, 30 mins in each of three mutually perpendicular axes. | |
| ESD | Contact : ±8KV/ operation<br>Air : ±15KV / operation | Note 1 |
| Room temperature Test | 25 , 2000hours, Operating with loop pattern | |

Note1: According to EN61000-4-2 , ESD class B: Some performance degradation allowed. No data lost

. Self-recoverable. No hardware failures.

Note2: CCFL Life time: 10,000 hours minimum under normal module usage.

Note3: MTBF (Excluding the CCFL): 30,000 hours with a confidence level 90%

# 10. Mechanical Characteristics

10.1 LCM Outline Dimension



Fig 1-LCM outline dimensions (Front side)
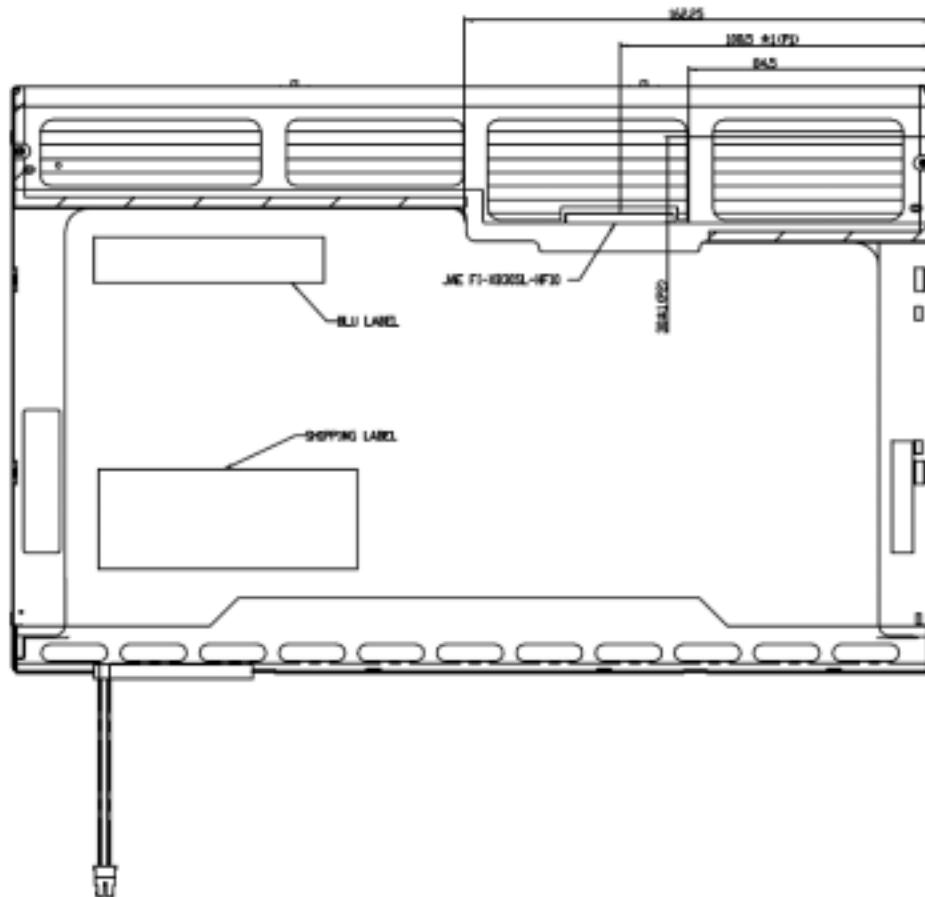
Fig 2-LCM outline dimensions (Back side)

10.2 Screw Hole Depth and Center Position

Screw hole minimum depth, from side surface =2.5 mm (See drawing)

Screw hole center location, from front surface = 3.1 ± 0.2mm (See drawing)

Screw Torque: Maximum 2.5 kgf-cm
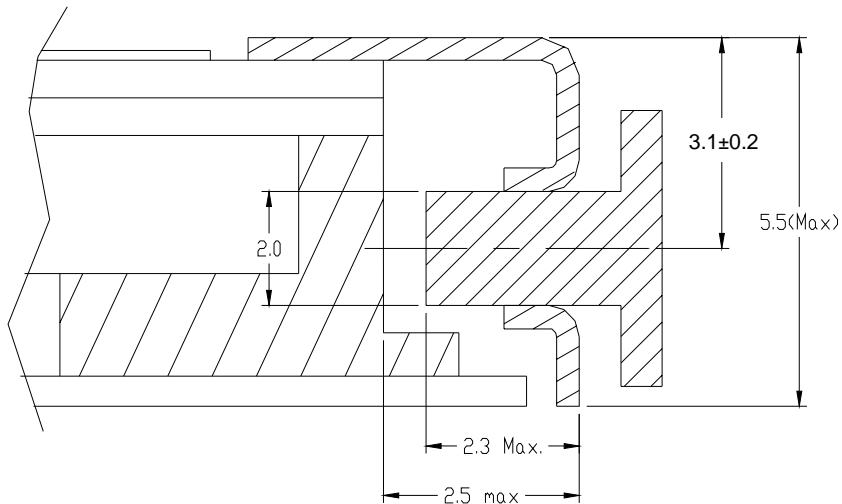
# 11. Shipping and Package

## 11.1 Shipping Label Format

**Manufactured 05/52**
**Model No: B141PW01**    **V.4**
**AU Optronics**    **3AXXG**    C  US  E204356
**MADE IN TAIWAN (S01)**

RoHS

**H/W: 3A**    **F/W:1**

* XXXXXXXXXXX-XXXXX *

## 11.2. Carton package

The outside dimension of carton is 455 (L)mm x 388 (W)mm x 355 (H)mm
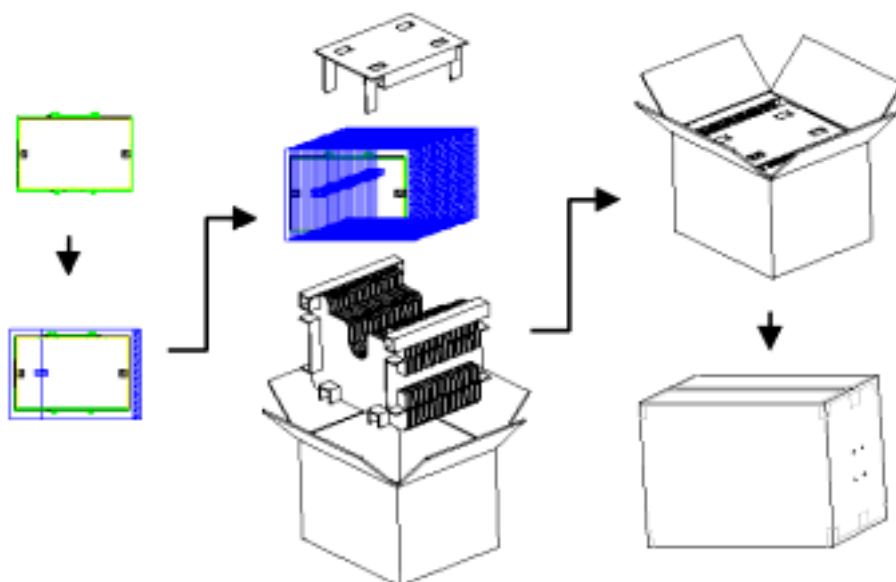


## 11.3 Shipping package of palletizing sequence



Top cardboard

Bottom cardboard
Wooden pallet
Corner angle
PE band
Stretch film
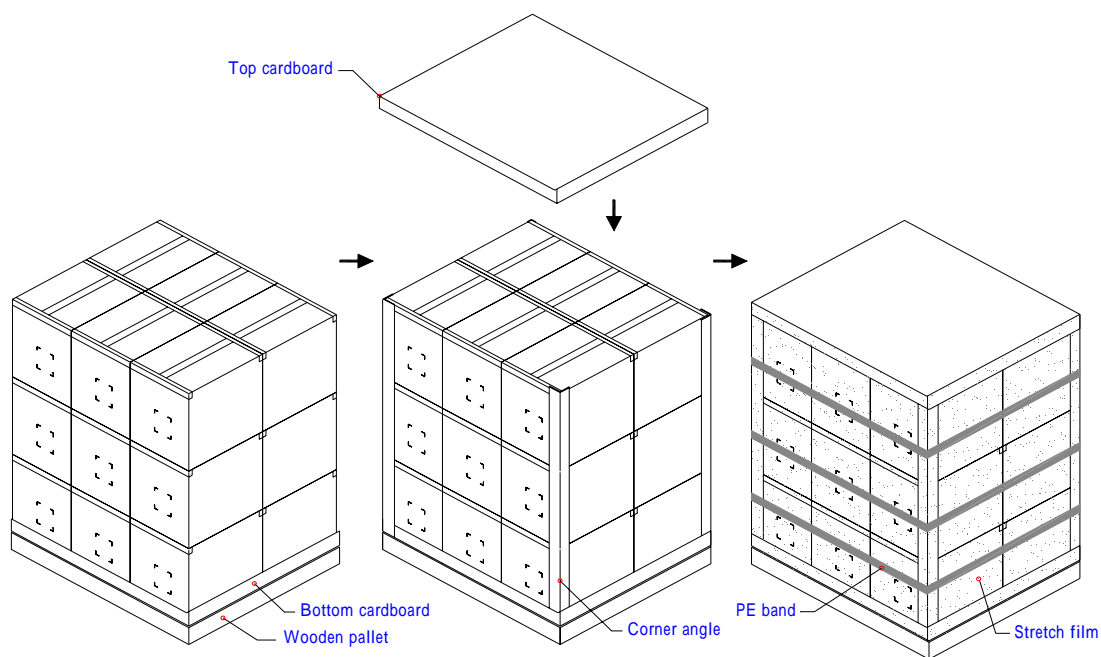
Note : Limit of box palletizing = Max 3 layers(ship and stock conditions)

# Product Specification

AU OPTRONICS CORPORATION

B141PW01 V4

## 12. Appendix: EDID description

| Address | FUNCTION | Value | Value | Value |
|---------|----------|-------|-------|-------|
| HEX | | HEX | BIN | DEC |
| 00 | Header | 00 | 00000000 | 0 |
| 01 | | FF | 11111111 | 255 |
| 02 | | FF | 11111111 | 255 |
| 03 | | FF | 11111111 | 255 |
| 04 | | FF | 11111111 | 255 |
| 05 | | FF | 11111111 | 255 |
| 06 | | FF | 11111111 | 255 |
| 07 | | 00 | 00000000 | 0 |
| 08 | EISA Manuf. Code LSB | 06 | 00000110 | 6 |
| 09 | Compressed ASCII | AF | 10101111 | 175 |
| 0A | Product Code | 47 | 01000111 | 71 |
| 0B | hex, LSB first | 14 | 00010100 | 20 |
| 0C | 32-bit ser # | 00 | 00000000 | 0 |
| 0D | | 00 | 00000000 | 0 |
| 0E | | 00 | 00000000 | 0 |
| 0F | | 00 | 00000000 | 0 |
| 10 | Week of manufacture | 01 | 00000001 | 1 |
| 11 | Year of manufacture | 10 | 00010000 | 16 |
| 12 | EDID Structure Ver. | 01 | 00000001 | 1 |
| 13 | EDID revision # | 03 | 00000011 | 3 |
| 14 | **Video input def.** *(digital I/P, non-TMDS, CRGB)* | 80 | 10000000 | 128 |
| 15 | **Max H image size** *(rounded to cm)* | 1E | 00011110 | 30 |
| 16 | **Max V image size** *(rounded to cm)* | 13 | 00010011 | 19 |
| 17 | **Display Gamma** *(=(gamma*100)-100)* | 78 | 01111000 | 120 |
| 18 | **Feature support** *(no DPMS, Active OFF, RGB, tmg Blk#1)* | 0A | 00001010 | 10 |
| 19 | Red/green low bits **(Lower 2:2:2:2 bits)** | 87 | 10000111 | 135 |
| 1A | Blue/white low bits **(Lower 2:2:2:2 bits)** | F5 | 11110101 | 245 |
| 1B | Red x **(Upper 8 bits)** | 94 | 10010100 | 148 |
| 1C | Red y/ highER 8 bits | 57 | 01010111 | 87 |
| 1D | Green x | 4F | 01001111 | 79 |
| 1E | Green y | 8C | 10001100 | 140 |
| 1F | Blue x | 27 | 00100111 | 39 |
| 20 | Blue y | 27 | 00100111 | 39 |
| 21 | White x | 50 | 01010000 | 80 |
| 22 | White y | 54 | 01010100 | 84 |
| 23 | Established timing 1 | 00 | 00000000 | 0 |
| 24 | Established timing 2 | 00 | 00000000 | 0 |
| 25 | Established timing 3 | 00 | 00000000 | 0 |
| 26 | Standard timing #1 | 01 | 00000001 | 1 |
| 27 | | 01 | 00000001 | 1 |

| | | | | |
|---|---|---|---|---|
| 28 | Standard timing #2 | 01 | 00000001 | 1 |
| 29 | | 01 | 00000001 | 1 |
| 2A | Standard timing #3 | 01 | 00000001 | 1 |
| 2B | | 01 | 00000001 | 1 |
| 2C | Standard timing #4 | 01 | 00000001 | 1 |
| 2D | | 01 | 00000001 | 1 |
| 2E | Standard timing #5 | 01 | 00000001 | 1 |
| 2F | | 01 | 00000001 | 1 |
| 30 | Standard timing #6 | 01 | 00000001 | 1 |
| 31 | | 01 | 00000001 | 1 |
| 32 | Standard timing #7 | 01 | 00000001 | 1 |
| 33 | | 01 | 00000001 | 1 |
| 34 | Standard timing #8 | 01 | 00000001 | 1 |
| 35 | | 01 | 00000001 | 1 |
| 36 | Pixel Clock/10000  LSB | 9E | 10011110 | 158 |
| 37 | Pixel Clock/10000  USB | 25 | 00100101 | 37 |
| 38 | Horz active  **Lower 8bits** | A0 | 10100000 | 160 |
| 39 | Horz blanking  **Lower 8bits** | 40 | 01000000 | 64 |
| 3A | HorzAct:HorzBlnk  **Upper 4:4 bits** | 51 | 01010001 | 81 |
| 3B | Vertical Active  **Lower 8bits** | 84 | 10000100 | 132 |
| 3C | Vertical Blanking  **Lower 8bits** | 0C | 00001100 | 12 |
| 3D | Vert Act : Vertical Blanking  **(upper 4:4 bit)** | 30 | 00110000 | 48 |
| 3E | HorzSync. Offset | 40 | 01000000 | 64 |
| 3F | HorzSync.Width | 20 | 00100000 | 32 |
| 40 | VertSync.Offset : VertSync.Width | 33 | 00110011 | 51 |
| 41 | Horz&Vert Sync Offset/Width **Upper 2bits** | 00 | 00000000 | 0 |
| 42 | Horizontal Image Size  **Lower 8bits** | 2F | 00101111 | 47 |
| 43 | Vertical Image Size  **Lower 8bits** | BD | 10111101 | 189 |
| 44 | Horizontal & Vertical Image Size  **(upper 4:4 bits)** | 10 | 00010000 | 16 |
| 45 | Horizontal Border  *(zero for internal LCD)* | 00 | 00000000 | 0 |
| 46 | Vertical Border  *(zero for internal LCD)* | 00 | 00000000 | 0 |
| 47 | Signal *(non-intr, norm, no stero, sep sync, neg pol)* | 18 | 00011000 | 24 |
| 48 | Detailed timing/monitor | 00 | 00000000 | 0 |
| 49 | descriptor #2 | 00 | 00000000 | 0 |
| 4A | | 00 | 00000000 | 0 |
| 4B | | 0F | 00001111 | 15 |
| 4C | | 00 | 00000000 | 0 |
| 4D | | 00 | 00000000 | 0 |
| 4E | | 00 | 00000000 | 0 |
| 4F | | 00 | 00000000 | 0 |
| 50 | | 00 | 00000000 | 0 |
| 51 | | 00 | 00000000 | 0 |
| 52 | | 00 | 00000000 | 0 |
| 53 | | 00 | 00000000 | 0 |

| 54 | | 00 | 00000000 | 0 |
|---|---|---|---|---|
| 55 | | 00 | 00000000 | 0 |
| 56 | | 00 | 00000000 | 0 |
| 57 | | 00 | 00000000 | 0 |
| 58 | | 00 | 00000000 | 0 |
| 59 | | 20 | 00100000 | 32 |
| 5A | Detailed timing/monitor | 00 | 00000000 | 0 |
| 5B | descriptor #3 | 00 | 00000000 | 0 |
| 5C | | 00 | 00000000 | 0 |
| 5D | | FE | 11111110 | 254 |
| 5E | | 00 | 00000000 | 0 |
| 5F | Manufacture | 41 | 01000001 | 65 |
| 60 | Manufacture | 55 | 01010101 | 85 |
| 61 | Manufacture | 4F | 01001111 | 79 |
| 62 | | 0A | 00001010 | 10 |
| 63 | | 20 | 00100000 | 32 |
| 64 | | 20 | 00100000 | 32 |
| 65 | | 20 | 00100000 | 32 |
| 66 | | 20 | 00100000 | 32 |
| 67 | | 20 | 00100000 | 32 |
| 68 | | 20 | 00100000 | 32 |
| 69 | | 20 | 00100000 | 32 |
| 6A | | 20 | 00100000 | 32 |
| 6B | | 20 | 00100000 | 32 |
| 6C | Detailed timing/monitor | 00 | 00000000 | 0 |
| 6D | descriptor #4 | 00 | 00000000 | 0 |
| 6E | | 00 | 00000000 | 0 |
| 6F | | FE | 11111110 | 254 |
| 70 | | 00 | 00000000 | 0 |
| 71 | Manufacture P/N | 42 | 01000010 | 66 |
| 72 | Manufacture P/N | 31 | 00110001 | 49 |
| 73 | Manufacture P/N | 34 | 00110100 | 52 |
| 74 | Manufacture P/N | 31 | 00110001 | 49 |
| 75 | Manufacture P/N | 50 | 01010000 | 80 |
| 76 | Manufacture P/N | 57 | 01010111 | 87 |
| 77 | Manufacture P/N | 30 | 00110000 | 48 |
| 78 | Manufacture P/N | 31 | 00110001 | 49 |
| 79 | Manufacture P/N | 20 | 00100000 | 32 |
| 7A | Manufacture P/N | 56 | 01010110 | 86 |
| 7B | Manufacture P/N | 34 | 00110100 | 52 |
| 7C | | 20 | 00100000 | 32 |
| 7D | | 0A | 00001010 | 10 |
| 7E | Extension Flag | 00 | 00000000 | 0 |
| 7F | Checksum | 21 | 00100001 | 33 |