



# Product Specification

AU OPTRONICS CORPORATION B170PW07 V0

(✓) Preliminary Specifications  
( ) Final Specifications

<b>Module</b>	17.0" WXGA+ Color TFT-LCD
<b>Model Name</b>	B170PW07 V0 (H/W 3A)

<b>Customer</b>	<b>Date</b>
<b>Checked &amp; Approved by</b>	<b>Date</b>
_____	_____
Note: This Specification is subject to change without notice.	

<b>Approved by</b>	<b>Date</b>
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# Product Specification

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## Record of Revision

Version and Date	Page	Old description	New Description	Remark
0.1 2006/09/25	All	Initial Edition		
0.2 2006/12/28	5	Power Specification	Modified from 13.2W to 12W	
0.3 2007/06/27	6	Color / Chromaticity	Modified from (0.313, 0.329) to (0.330, 0.349)	
0.4 2007/11/08	21 32	1.Timing Characteristics 2.Shipping Label Format	Change Label	EC NO. AUNB-17B 09.003
0.5 2007/11/27	32	Shipping Label Format	Change Label	EC NO. AUNB-17B 09.003



## 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 CCFL 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 (CCFL) 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

B170PW07 V0 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) without backlight inverter. All input signals are LVDS interface compatible.

B170PW07 V0 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 °C condition:

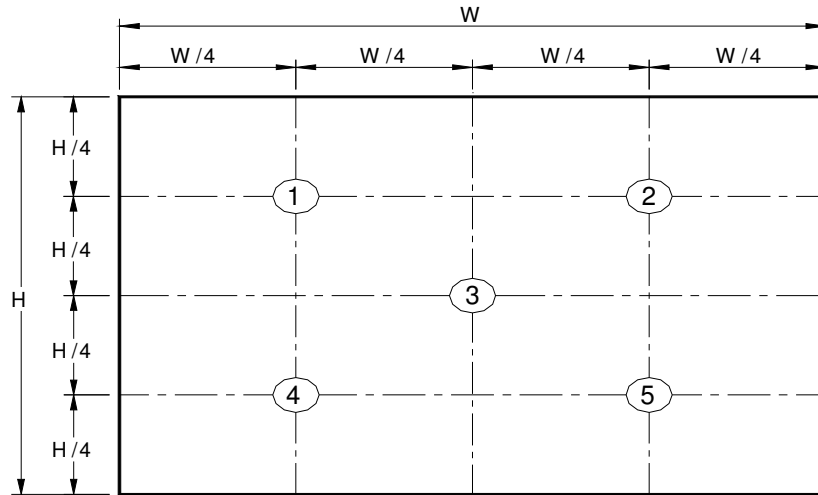
Items	Unit	Specifications																
Screen Diagonal	[mm]	431.8 (17"W)																
Active Area	[mm]	367.20(H) X 229.50(V)																
Pixels H x V		1440x3(RGB) x 900																
Pixel Pitch	[mm]	0.255X0.255																
Pixel Format		R.G.B. Vertical Stripe																
Display Mode		Normally White																
White Luminance <b>(ICCFL=6.5mA)</b> Note: ICCFL is lamp current	[cd/m <sup>2</sup> ]	500 typ. (5 points average) 425 min. (5 points average) (Note1)																
Luminance Uniformity		1.5 max. (5 points)																
Contrast Ratio		600 min																
Response Time	[ms]	8 typ / 15 Max																
Nominal Input Voltage VDD	[Volt]	+3.3 typ.																
Power Consumption	[Watt]	12 max. (Include Logic and Backlight)																
Weight	[Grams]	725 max.																
Physical Size	[mm]	<table border="1"> <thead> <tr> <th></th> <th>L</th> <th>W</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>Max</td> <td>382.70</td> <td>248.00</td> <td>7.0</td> </tr> <tr> <td>Typical</td> <td>382.20</td> <td>247.50</td> <td></td> </tr> <tr> <td>Min</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		L	W	T	Max	382.70	248.00	7.0	Typical	382.20	247.50		Min			
			L	W	T													
		Max	382.70	248.00	7.0													
		Typical	382.20	247.50														
Min																		
Electrical Interface		2 channel LVDS																
Surface Treatment		Glare																
Support Color		262K colors ( RGB 6-bit )																
Temperature Range																		
Operating	[°C]	0 to +50																
Storage (Non-Operating)	[°C]	-20 to +60																
RoHS Compliance		RoHS Compliance																

## 2.2 Optical Characteristics

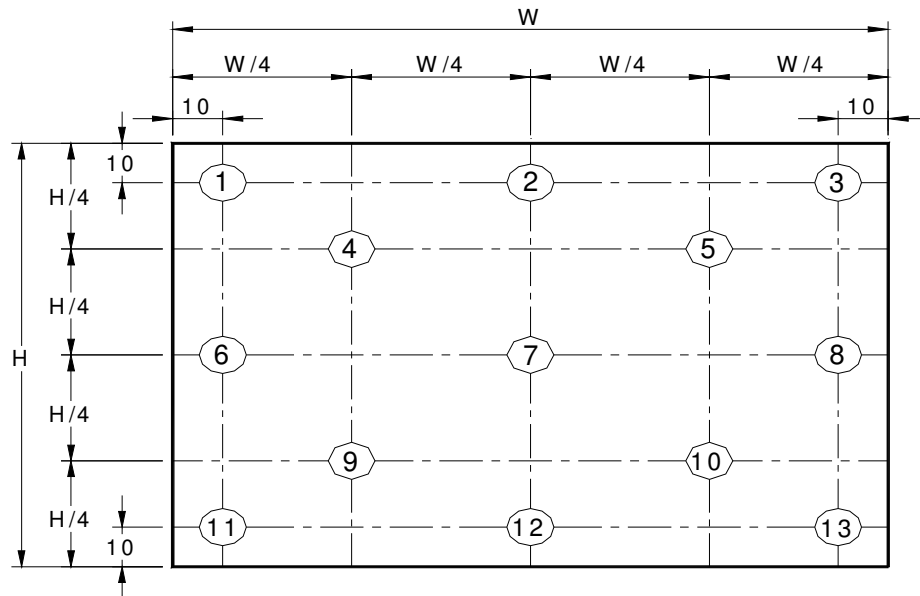
The optical characteristics are measured under stable conditions at 25°C (Room Temperature) :

Item	Unit	Conditions	Min.	Typ.	Max.	Note
White Luminance ICCFL=6.5mA	[cd/m <sup>2</sup> ]	5 points average	425	500	-	1, 4, 5.
Viewing Angle	[degree]	Horizontal (Right)	60	70	-	8
	[degree]	CR = 10 (Left)	60	70	-	
	[degree]	Vertical (Upper)	50	60	-	
	[degree]	CR = 10 (Lower)	50	60	-	
Luminance Uniformity		5 Points	-	-	1.5	1
CR: Contrast Ratio			600	800	-	6
Cross talk	%				4	7
Response Time	[msec]	Rising	-	-	-	8
	[msec]	Falling	-	-	-	
Chromaticity of color Coordinates (CIE 1931)  NTSC	[msec]	Rising + Falling	-	8	12	2,8
	%	Red x	0.618	0.648	0.678	
		Red y	0.308	0.338	0.368	
		Green x	0.262	0.292	0.322	
		Green y	0.582	0.612	0.642	
		Blue x	0.115	0.145	0.175	
		Blue y	0.045	0.075	0.105	
		White x	0.300	0.330	0.360	
		White y	0.319	0.349	0.370	
		CIE 1931	-	72	-	

Note 1: 5 points position (Ref: Active area)



Note 2: 13 points position (Ref: Active area)



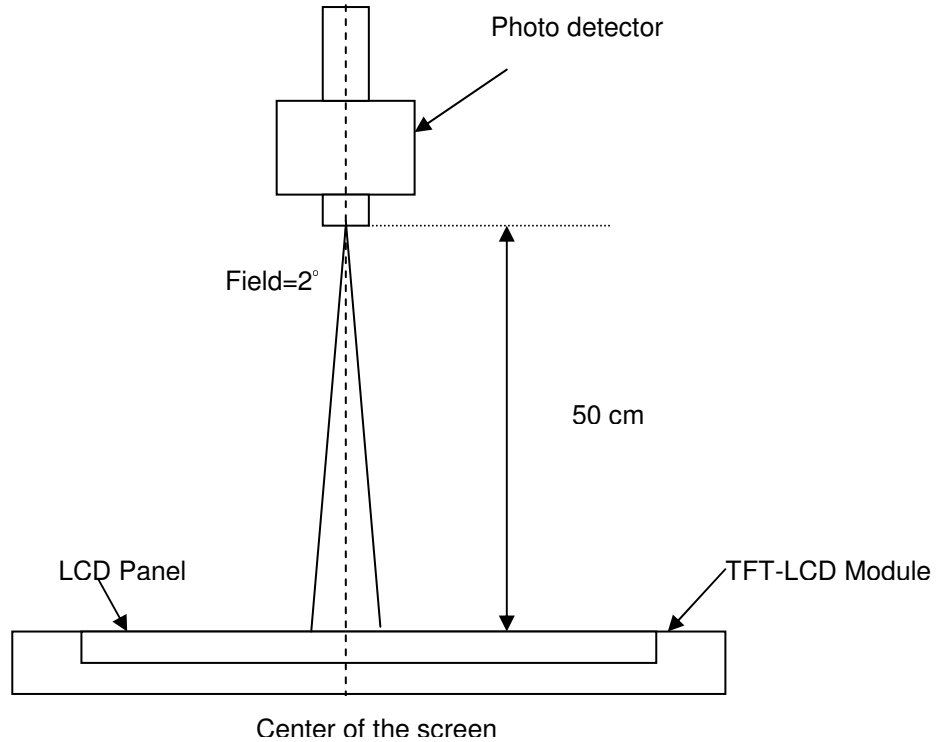
Note 3: The luminance uniformity of 5 or 13 points is defined by dividing the maximum luminance values by the minimum test point luminance

$$\delta_{w5} = \frac{\text{Maximum Brightness of five points}}{\text{Minimum Brightness of five points}}$$

$$\delta_{w13} = \frac{\text{Maximum Brightness of thirteen points}}{\text{Minimum Brightness of thirteen points}}$$

## 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.



## 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)

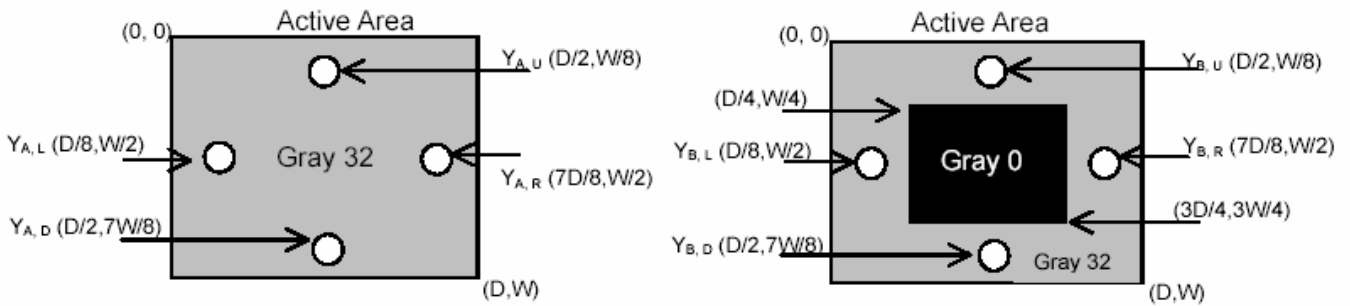
$$CT = | Y_B - Y_A | / Y_A \times 100 (\%)$$



Where

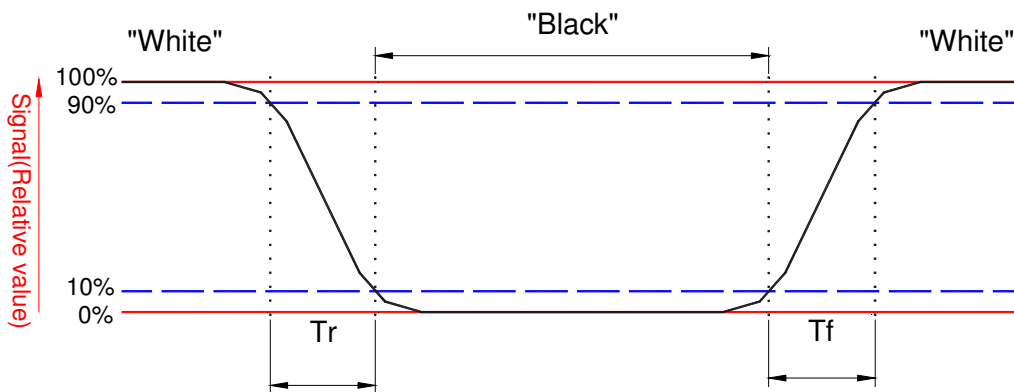
$Y_A$  = Luminance of measured location without gray level 0 pattern (cd/m<sup>2</sup>)

$Y_B$  = Luminance of measured location with gray level 0 pattern (cd/m<sup>2</sup>)



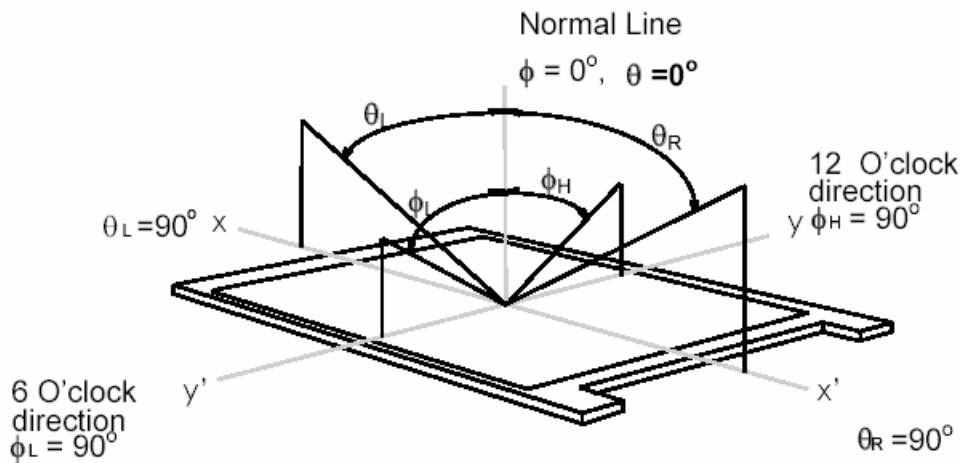
Note 8: Definition of response time:

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.



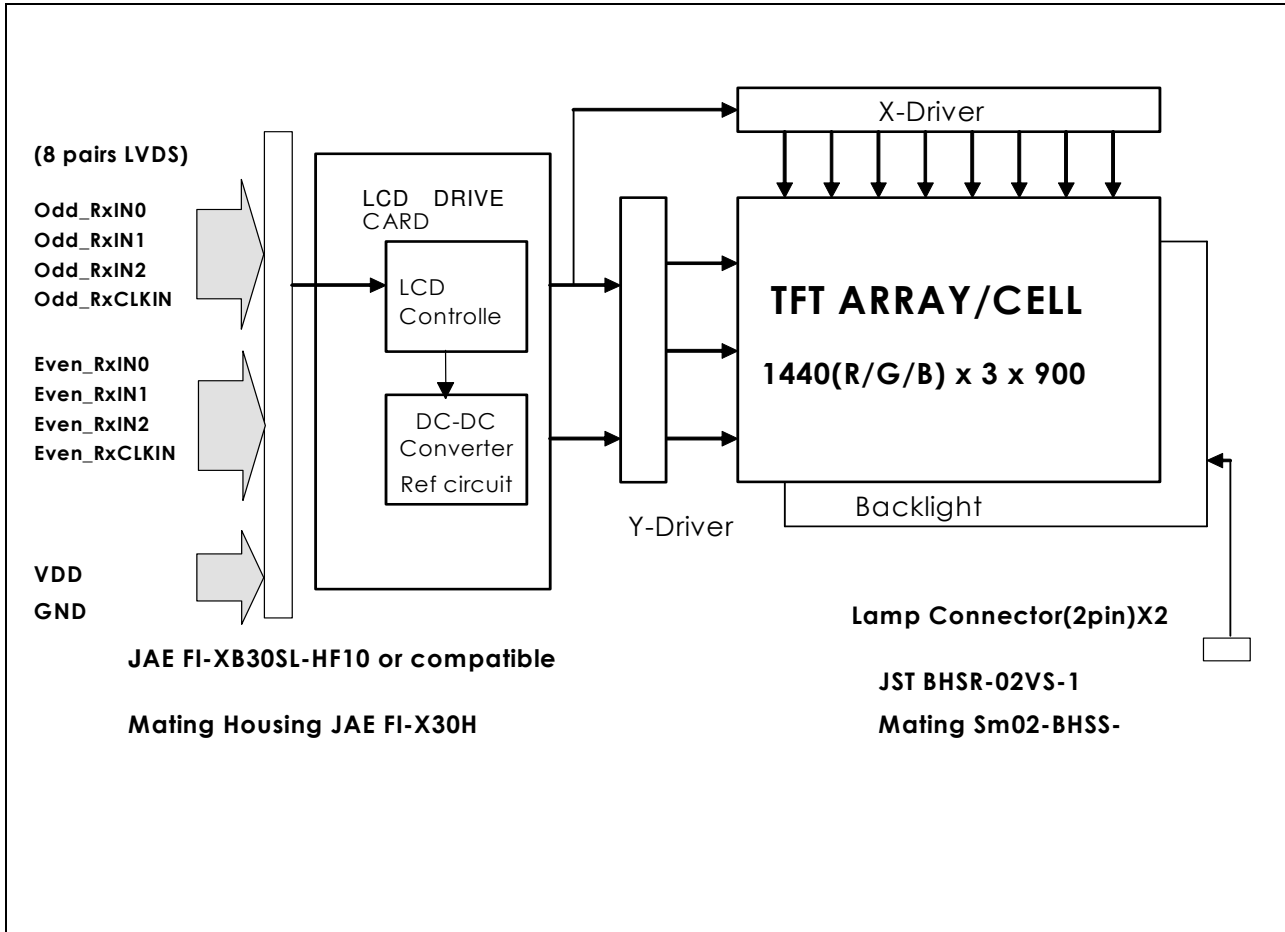
Note 8. Definition of viewing angle

Viewing angle is the measurement of contrast ratio  $\geq 10$ , at the screen center, over a  $180^\circ$  horizontal and  $180^\circ$  vertical range (off-normal viewing angles). The  $180^\circ$  viewing angle range is broken down as follows;  $90^\circ$  ( $\theta$ ) horizontal left and right and  $90^\circ$  ( $\phi$ ) 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 17 inches wide Color TFT/LCD Module:



## 4. Absolute Maximum Ratings

An absolute maximum rating of the module is as following:

### 4.1 Absolute Ratings of TFT LCD Module

Item	Symbol	Min	Max	Unit	Conditions
Logic/LCD Drive	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	-	7.0	[mA] rms	Note 1,2

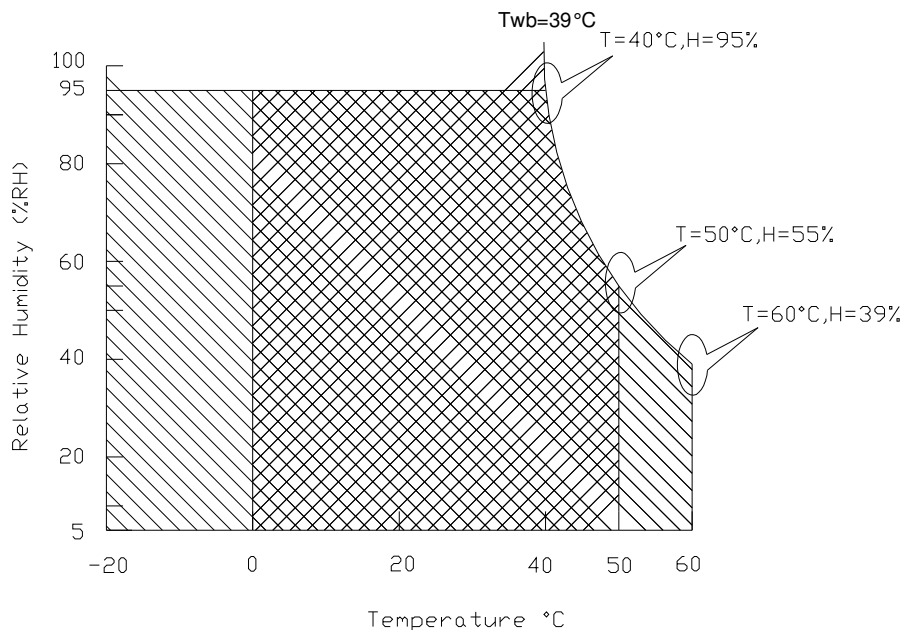
### 4.3 Absolute Ratings of Environment

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

Note 1: At Ta (25°C )

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

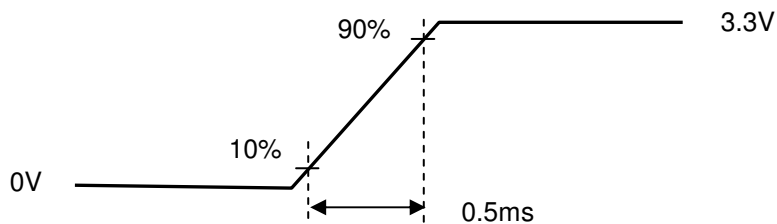
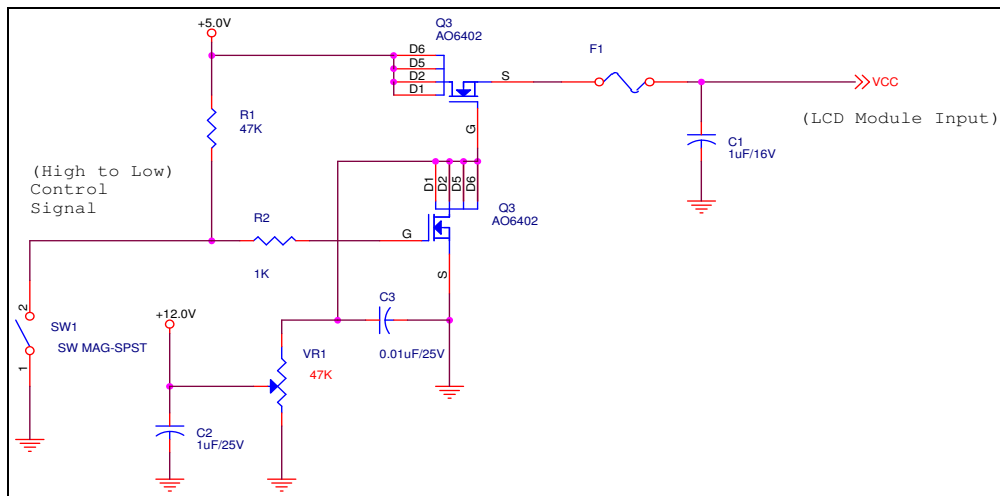
Input power specifications are as follows;

Symble	Parameter	Min	Typ	Max	Units	Note
VDD	Logic/LCD Drive Voltage	3.0	3.3	3.6	[Volt]	
PDD	VDD Power	-	-	3.0	[Watt]	Note 1/2
IDD	IDD Current	-	-	900	[mA]	Note 1/2(VDD=3.3V)
IRush	Inrush Current	-	-	1000	[mA]	Note 3
VDDrp	Allowable Logic/LCD Drive Ripple Voltage	-	-	100	[mV] p-p	

Note 1 : Maximum Measurement Condition : Black Pattern

Note 2 : Typical Measurement Condition: Mosaic Pattern

Note 3 : Measure Condition



## 5.1.2 Signal Electrical Characteristics

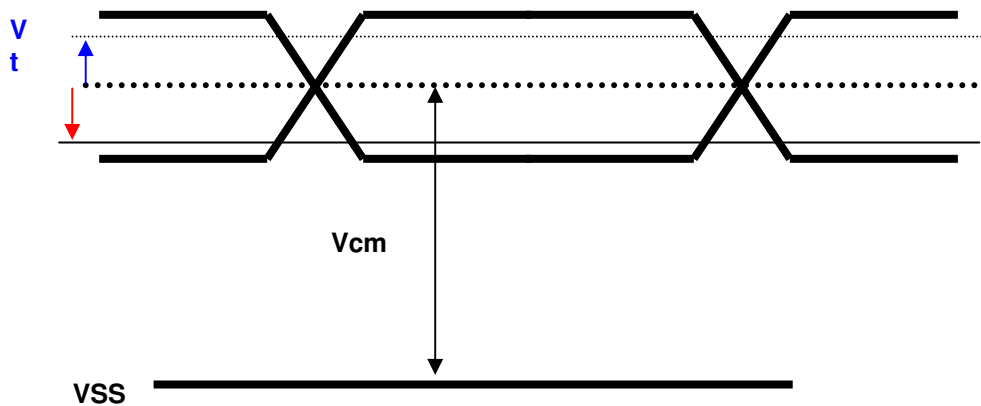
Input signals shall be low or High-impedance state when VDD is off.

It is recommended to refer the specifications of THC63LVDF84A (Thine Electronics Inc.) 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 Signal Waveform



## 5.2 Backlight Unit

CCFL Parameter guideline for single CCFL Inverter selection (Ref. Remark 1)

Parameter	Min	Typ	Max	Units	Condition
CCFL current(ICCFL)	2.0	6.0	6.5	[mA] rms	(Ta=25°C) Note 1
CCFL Frequency(FCCFL)	40	60	80	[KHz]	(Ta=25°C) Note 2,3
CCFL startup Voltage(Vs)	--	1210	1450	[Volt] rms	(Ta= 0°C) Note 4
CCFL startup Voltage(Vs)	--	1010	1210	[Volt] rms	(Ta= 25°C) Note 4
CCFL Voltage (Reference) (VCCFL)	666	740	814	[Volt] rms	(Ta=25°C) Note 5
CCFL Power consumption (PCCFL)		4.44	5.04	[Watt]	(Ta=25°C) Note 5
CCFL Life-Time	10,000	-	-	Hour	(Ta=25°C) Note 7

**Remark 1:** Typ are AUO recommended Design Points.

- 1-1 All of characteristics listed are measured under the condition using the AUO Test inverter.
- 1-2 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.
- 1-3 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 CCFL is damaged.
- 1-4 Generally, CCFL has some amount of delay time after applying starting voltage. It is recommended to keep on applying starting voltage for **1 [Sec]** until discharge.
- 1-5 CCFL discharge frequency must be carefully chosen so as not to produce interfering noise stripes on the screen.
- 1-6 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 1:** It should be employed the inverter which has "Duty Dimming", if ICCFL is less than 2mA.

**Note 2:** CCFL discharge frequency should be carefully determined to avoid interference between inverter and TFT LCD.

**Note 3:** The frequency range will not affect to lamp life and reliability characteristics.

**Note 4:** **The output voltage of inverter should be able to give out a power after ballast capacitor , the generating capacity have to be larger than a lamp startup voltage**, otherwise backlight may has blinking for a moment after turns on or can not be turned on.

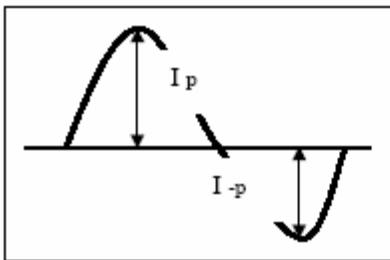
**Note 5:** Calculator value for reference ( $ICCFL \times VCCFL = PCCFL$ )

**Note 6:** 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  $\sqrt{2} \pm 10\%$ .

\* Inverter output waveform had better be more similar to ideal sine wave.



\* Asymmetry rate:

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

\* Distortion rate

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

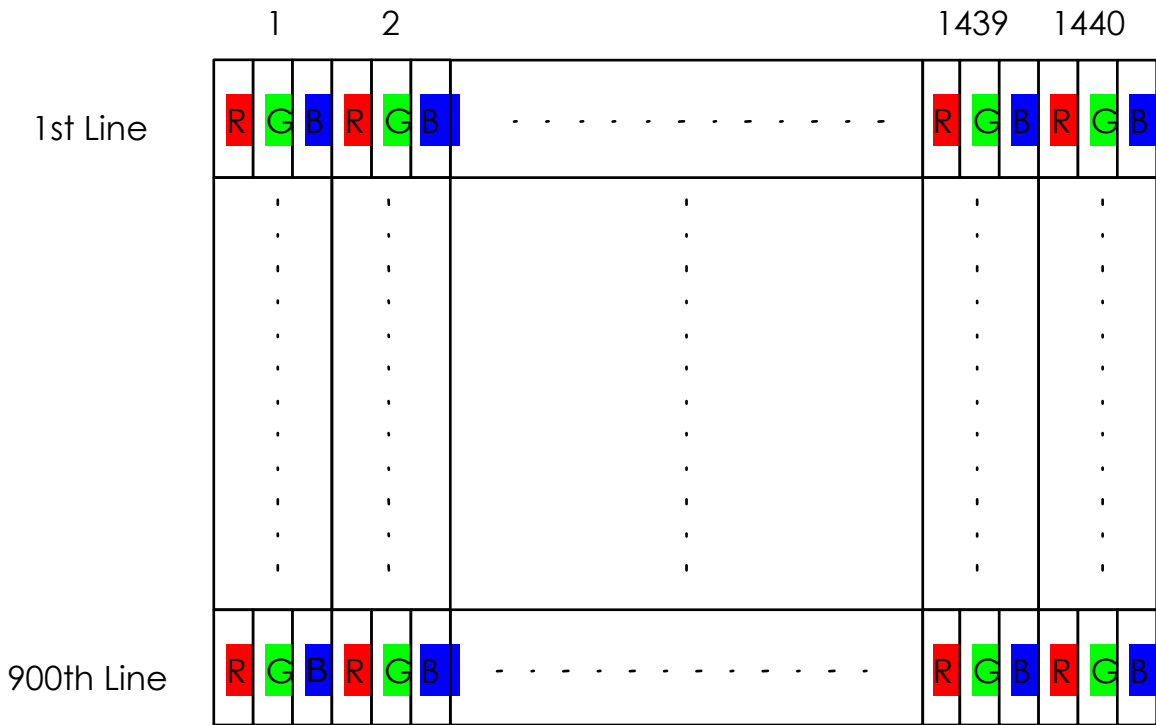
**Note 7:** It is an edge-type BLU with Double CCFL, the life-time define as the brightness decay to 50% of original value and under normal operation.



## 6. Signal Characteristic

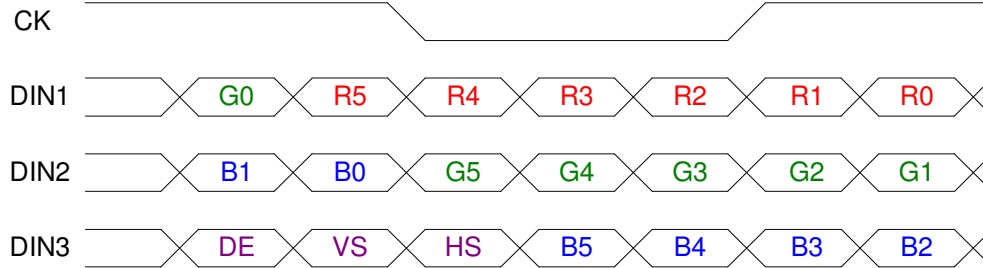
### 6.1 Pixel Format Image

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

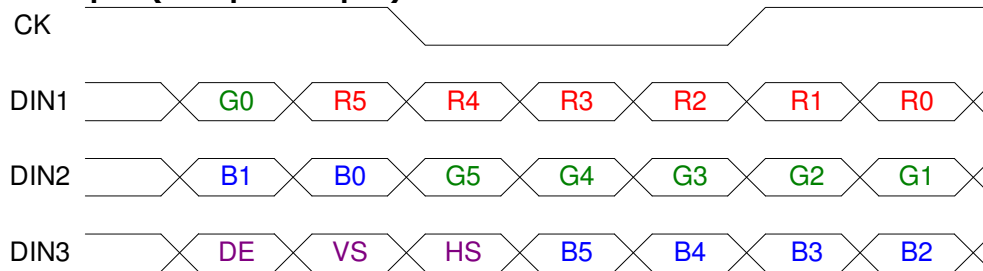


## 6.2 The input data format

### ODD pair( 1st pixel input)



### Even pair(2nd pixel input)



Signal Name	Description	
R5 R4 R3 R2 R1 R0	Red Data 5 (MSB) Red Data 4 Red Data 3 Red Data 2 Red Data 1 Red Data 0 (LSB) <b>Red-pixel Data</b>	Red-pixel Data Each red pixel's brightness data consists of these 6 bits pixel data.
G5 G4 G3 G2 G1 G0	Green Data 5 (MSB) Green Data 4 Green Data 3 Green Data 2 Green Data 1 Green Data 0 (LSB) <b>Green-pixel Data</b>	Green-pixel Data Each green pixel's brightness data consists of these 6 bits pixel data.
B5 B4 B3 B2 B1 B0	Blue Data 5 (MSB) Blue Data 4 Blue Data 3 Blue Data 2 Blue Data 1 Blue Data 0 (LSB) <b>Blue-pixel Data</b>	Blue-pixel Data Each blue pixel's brightness data consists of these 6 bits pixel data.
RxCLKIN	<b>Data Clock</b>	The typical frequency is 78.5 MHz. The signal is used to strobe the pixel data and DSPTMG signals. All pixel data shall be valid at the falling edge when the DSPTMG signal is high.
DE	<b>Display Timing</b>	This signal is strobed at the falling edge of -DTCLK. When the signal is high, the pixel data shall be valid to be displayed.
VS	<b>Vertical Sync</b>	The signal is synchronized to -DTCLK .
HS	<b>Horizontal Sync</b>	The signal is synchronized to -DTCLK .

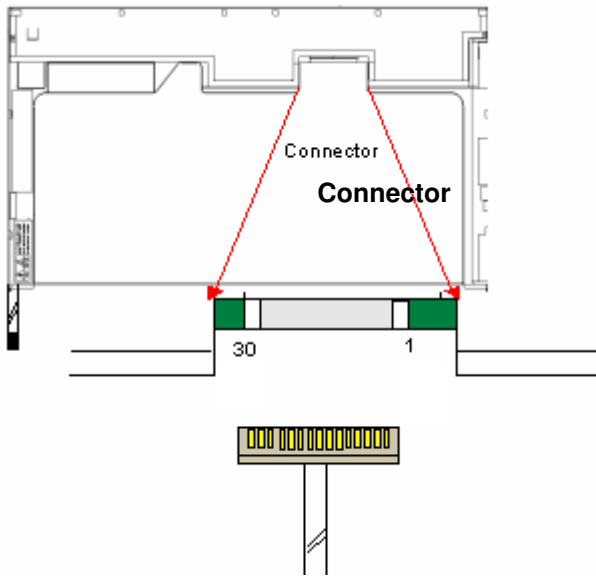
Note: Output signals from any system shall be low or High-Z state when VDD is off.

## 6.3 Signal Description/Pin Assignment

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

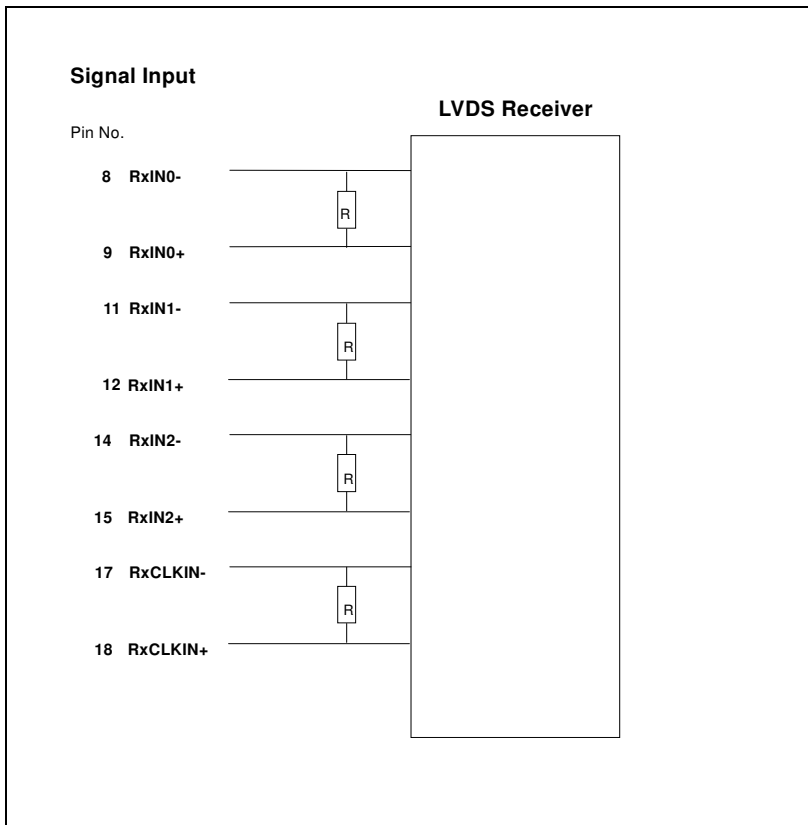
	Symbol	Function
1	GND	Ground
2	VDD	Power supply ,3.3 V (typical)
3	VDD	Power supply ,3.3 V (typical)
4	V <sub>EDID</sub>	DDC 3.3V power
5	NC	No Connection (Reserved for AUO) test
6	CLK <sub>EDID</sub>	DDC Clock
7	Data <sub>EDID</sub>	DDC data
8	Odd_RxIN0-	-LVDS differential data input
9	Odd_RxIN0+	+LVDS 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



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



## 6.4 Interface Timing

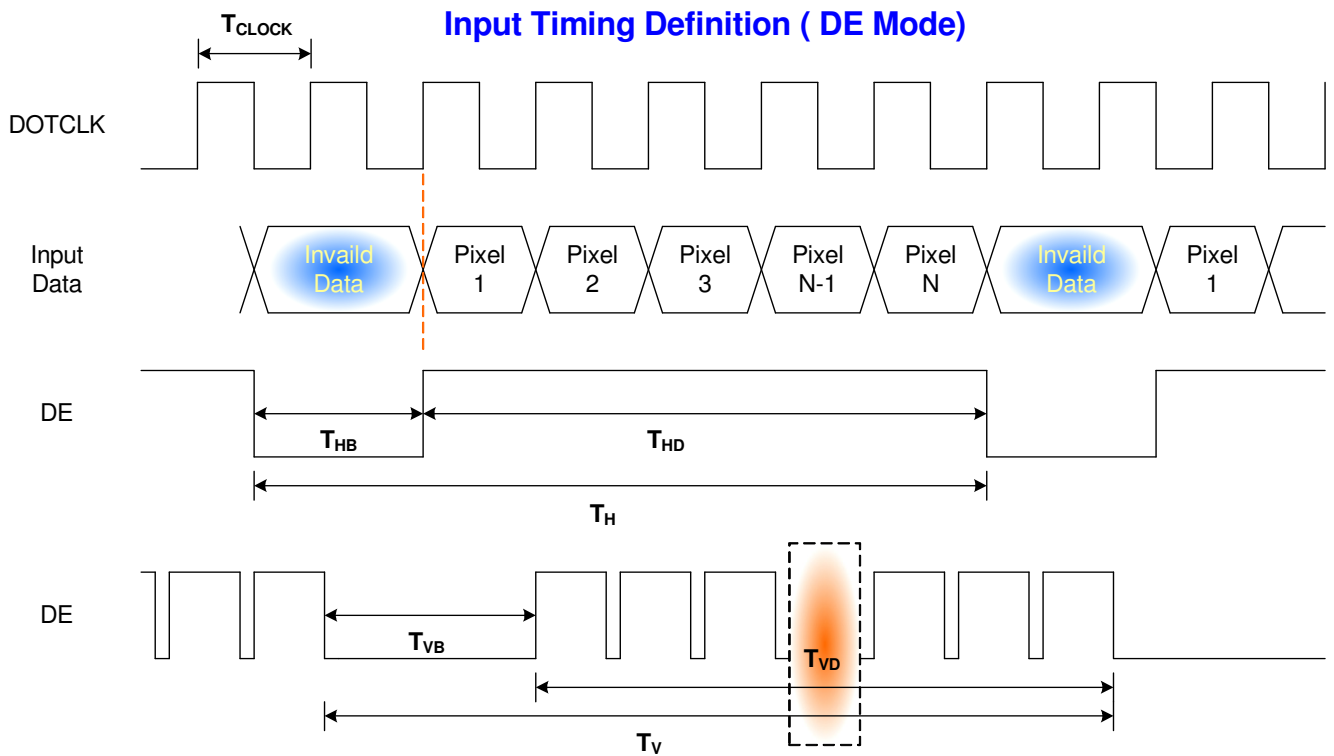
### 6.4.1 Timing Characteristics

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	
Frame Rate	-	-	60	-	Hz	
Clock frequency	1/ T <sub>clock</sub>	30	44.4	85	MHz	
Vertical Section	Period	T <sub>V</sub>	908	926	2047	T <sub>Line</sub>
	Active	T <sub>VD</sub>	900	900	900	
	Blanking	T <sub>VB</sub>	8	26	-	
Horizontal Section	Period	T <sub>H</sub>	750	800	2047	T <sub>clock</sub>
	Active	T <sub>HD</sub>	720	720	720	
	Blanking	T <sub>HB</sub>	30	80	-	

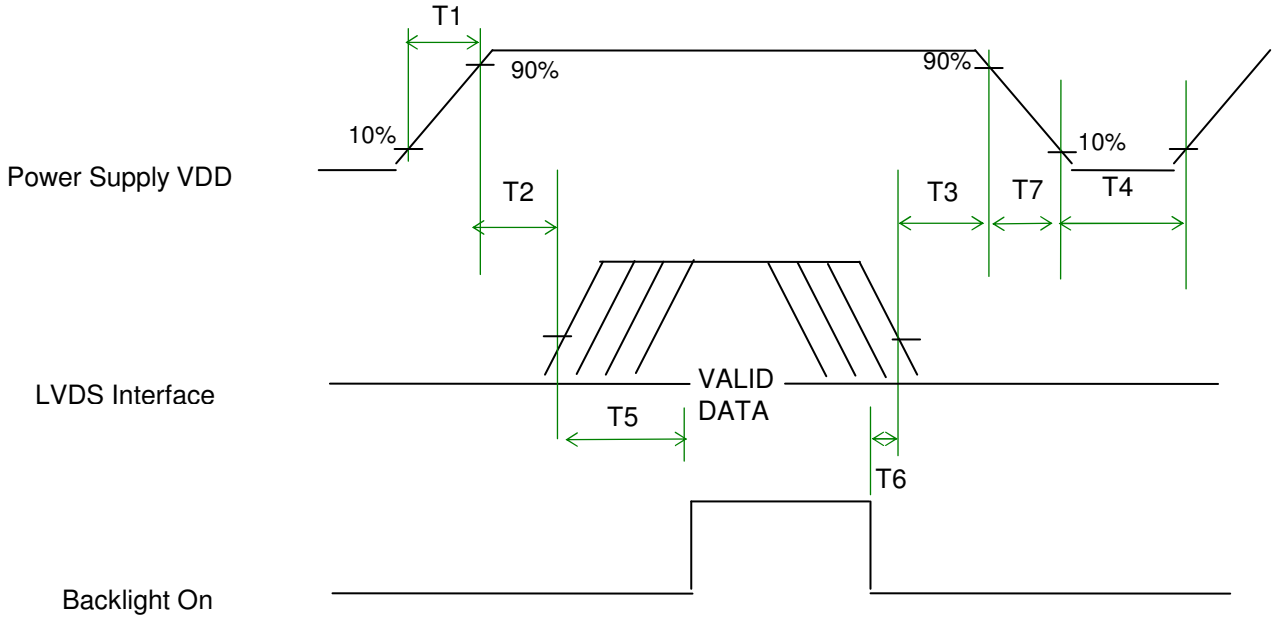
Note : DE mode only

## 6.4.2 Timing diagram



## 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.



### Timing

Parameter	Value			Units
	Min.	Typ.	Max.	
T1	0.5	-	10	(ms)
T2	0	-	50	(ms)
T3	0	-	50	(ms)
T4	400	-	-	(ms)
T5	200	-	-	(ms)
T6	200	-	-	(ms)
T7	0	-	10	(ms)

### Power Sequence

## 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
Mating Contact/Part Number	FI-XC3-1-15000

### 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	Red	Lamp High Voltage
2	White	Lamp Low Voltage
1	Blue	Lamp High Voltage
2	Black	Lamp Low Voltage



## 8. Dynamic Test

### 8.1 Vibration Test

**Test condition:**

- Acceleration: 1.5 G
- Frequency: 10 - 500Hz Random
- Sweep: 30 Minutes each Axis (X, Y, Z)

### 8.2 Shock Test Spec:

**Test condition:**

- Acceleration: 180 G , Half sine wave
- Active time: 2 ms
- Pulse: +/-X,+/-Y,+/-Z , one time for each side

**Remark:**

1. Ambient condition is  $25 \pm 5^{\circ}\text{C}$ , Relative humidity : 40% ~ 70%
2. Non-packaged and Non-operation

## 9. Reliability

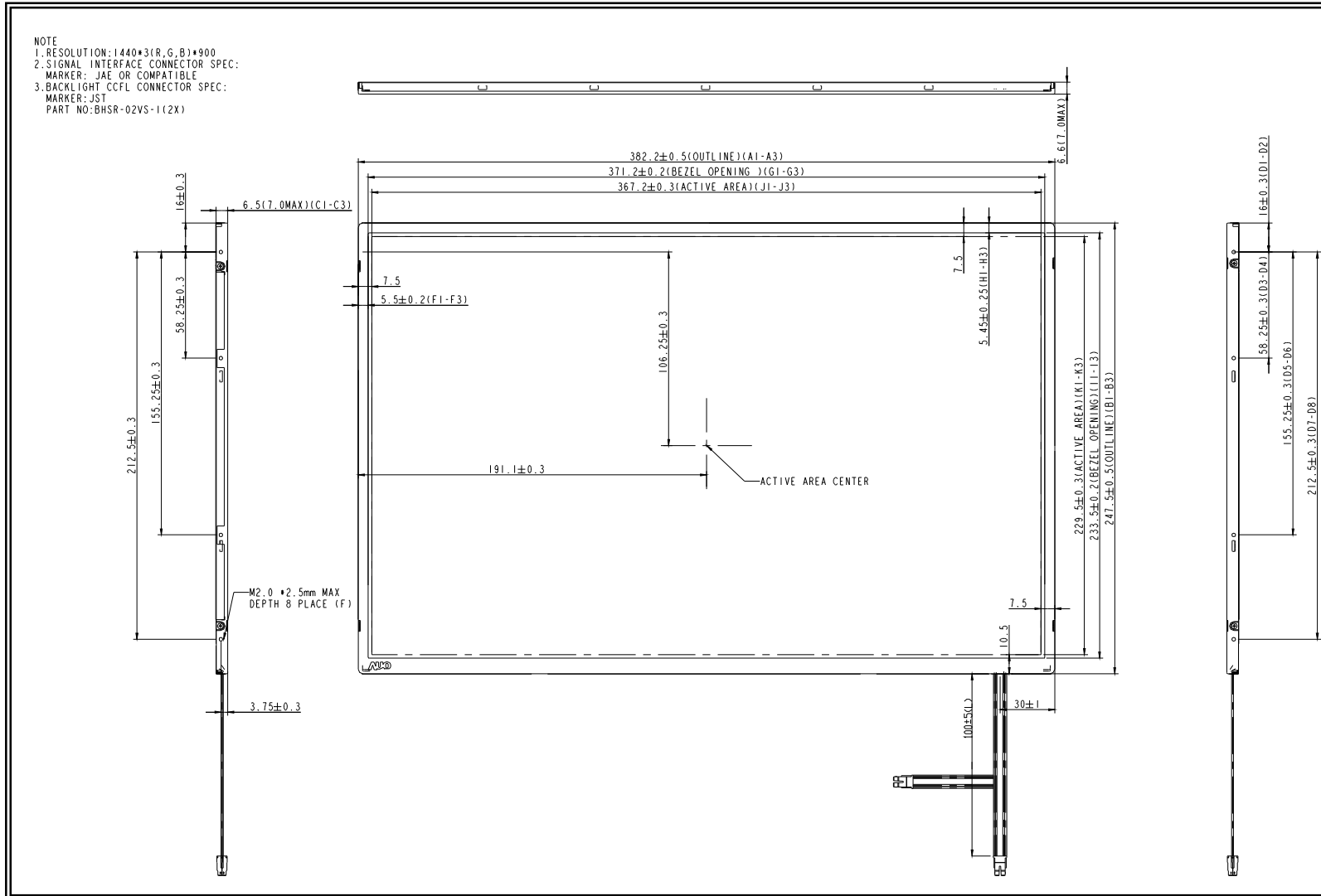
Items	Required Condition	Note
Temperature Humidity Bias	Ta= 40°C, 90%RH, 300h	
High Temperature Operation	Ta= 50°C, Dry, 300h	
Low Temperature Operation	Ta= 0°C, 300h	
High Temperature Storage	Ta= 60°C, 35%RH, 300h	
Low Temperature Storage	Ta= -20°C, 50%RH, 300h	
Thermal Shock Test	Ta=-20°C to 60°C, Duration at 30 min, 100 cycles	
ESD	Contact : ±8 KV Air : ±15 KV	Note 1

**Note1:** According to EN 61000-4-2 , ESD class B: Some performance degradation allowed. No data lost . Self-recoverable. No hardware failures.

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

## 10. Mechanical Characteristics

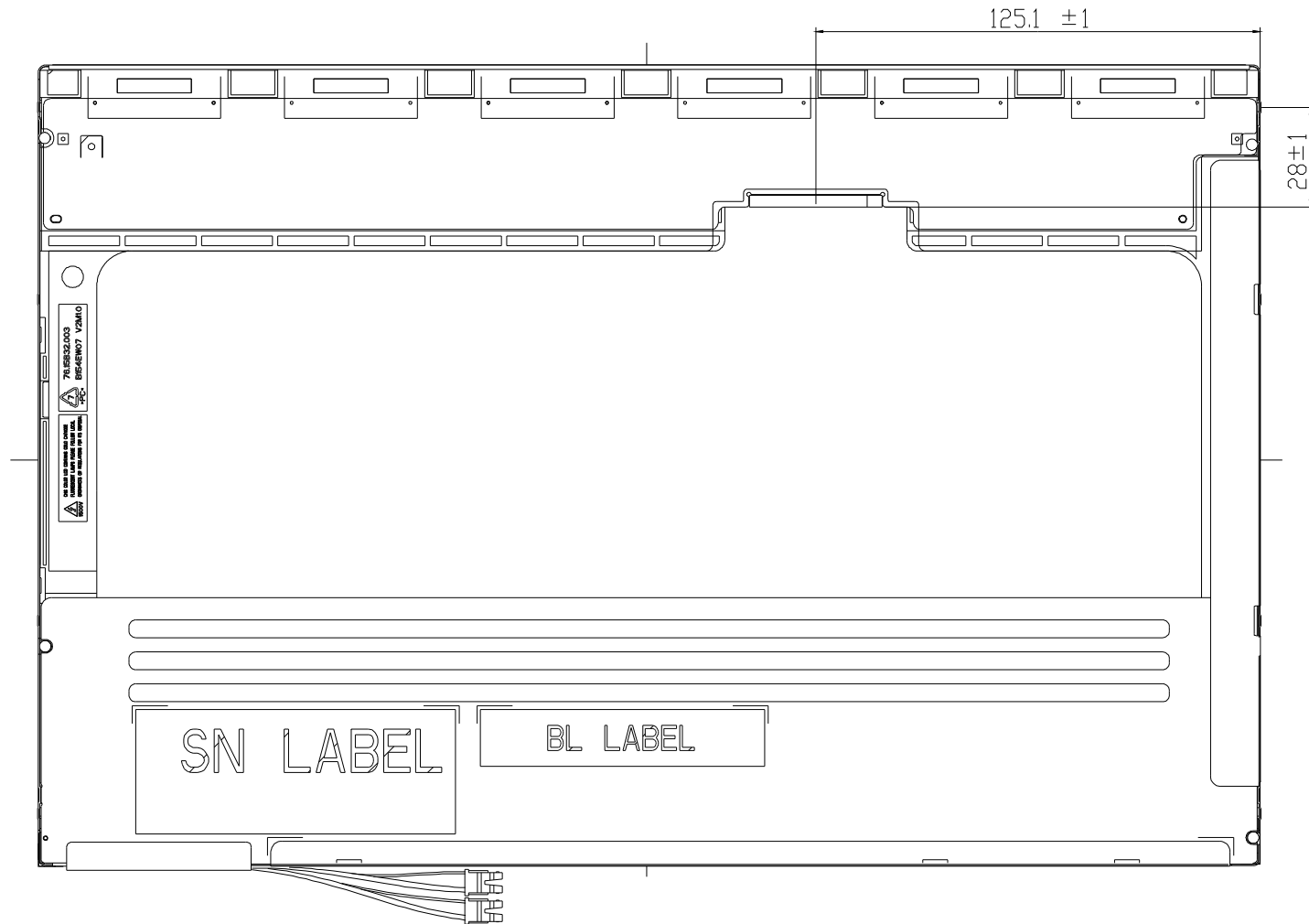
### 10.1 LCM Outline Dimension





# Product Specification

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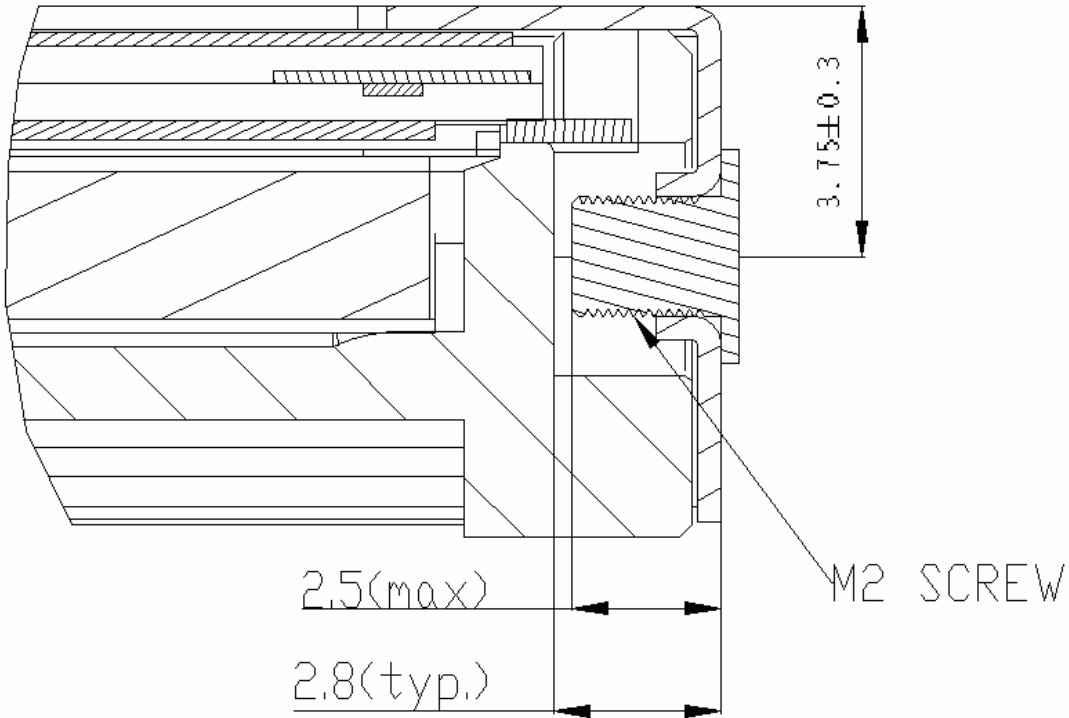
## 10.2 Screw Hole Depth and Center Position

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

Screw hole center location, from front surface =  $3.75 \pm 0.3$  mm (See drawing)

Screw maximum length = 2.3 mm (See drawing)

Screw Torque: Maximum 2.5 kgzf-cm









# Product Specification

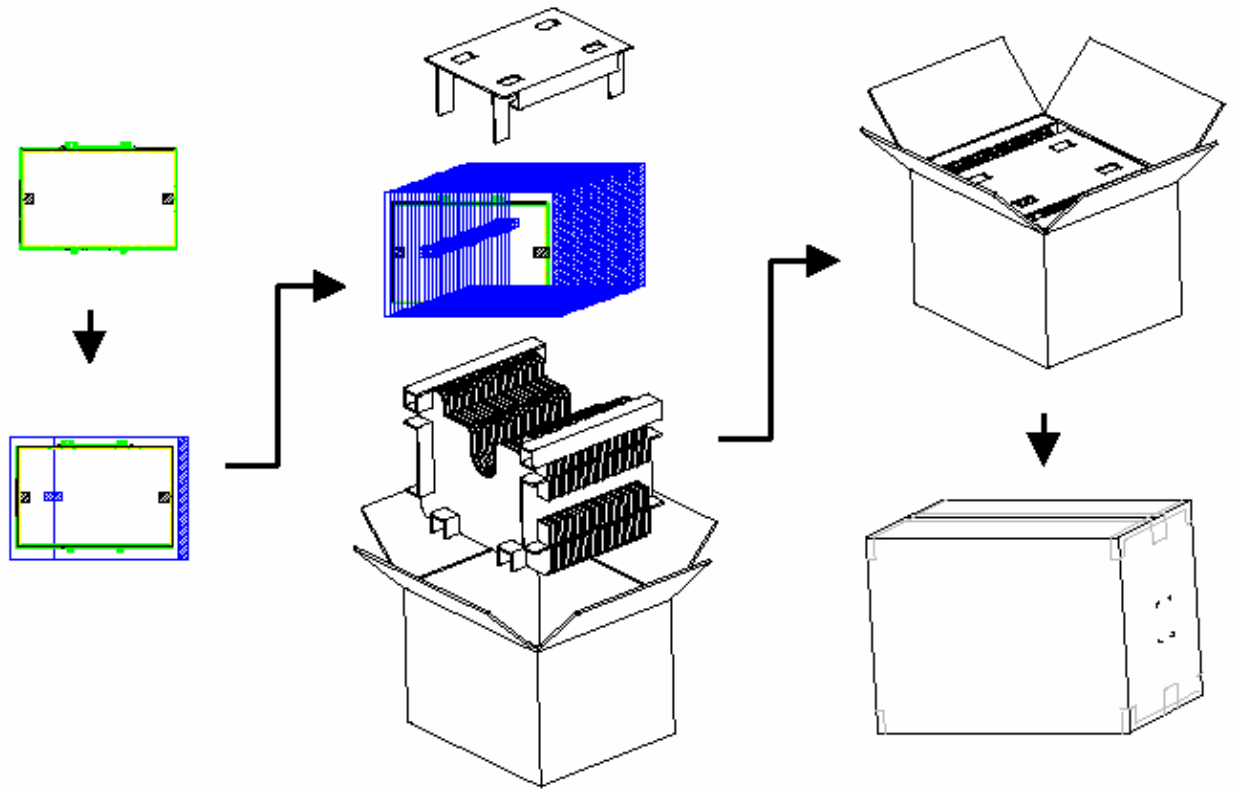
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## 11. Shipping and Package

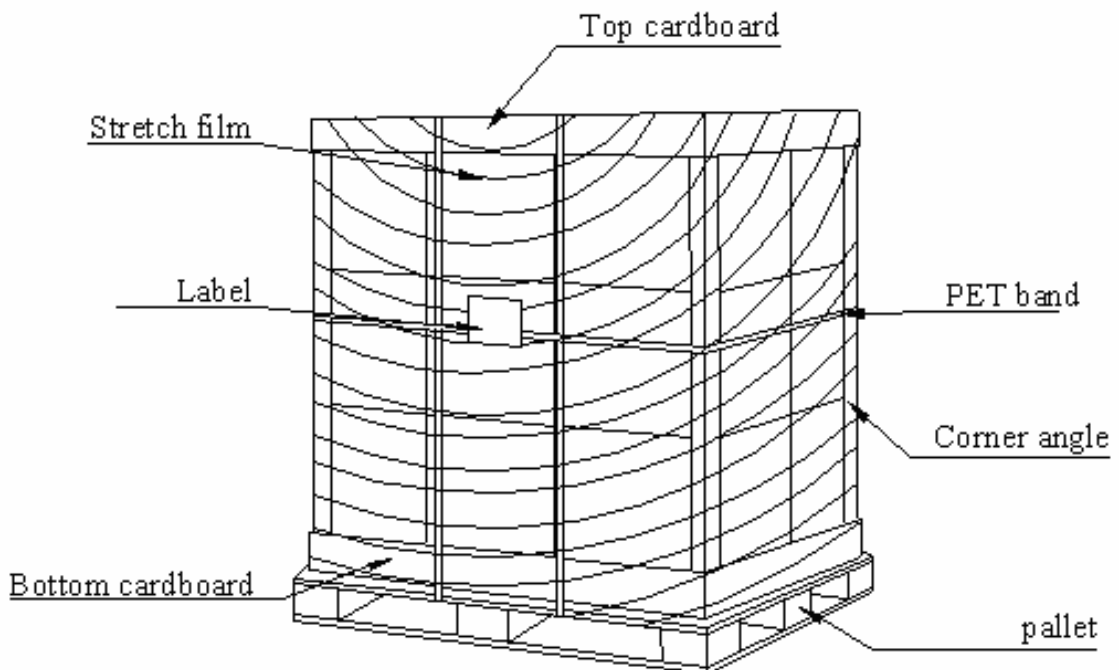
### 11.1 Shipping Label Format

 XXXXXXXXXXXXXXXX-XXXXXX	<b>Manufactured 05/52</b> <b>Model No: B170PW07 V.0</b> <b>AU Optronics</b> <b>MADE IN TAIWAN(M1)</b> <b>H/W: 3A F/W:1</b>	<b>c</b>  <b>US</b> <b>E204356</b>	 
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### 11.2 Carton package



### 11.3 Shipping package of palletizing sequence





# Product Specification

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## 12. Appendix: EDID description

B170PW07 V0 EDID Code					
Address	FUNCTION	Value	Value	Value	Note
HEX		HEX	BIN	DEC	
00	Header	0	00000000	0000000	
01		FF	11111111	0000255	
02		FF	11111111	0000255	
03		FF	11111111	0000255	
04		FF	11111111	0000255	
05		FF	11111111	0000255	
06		FF	11111111	0000255	
07		0	00000000	0000000	
08	EISA Manuf. Code LSB	6	00000110	0000006	
09	Compressed ASCII	AF	10101111	0000175	
0A	Product Code	87	10000111	0000135	
0B	hex, LSB first	70	01110000	0000112	
0C	32-bit ser #	0	00000000	0000000	
0D		00	00000000	0000000	
0E		00	00000000	0000000	
0F		00	00000000	0000000	
10	Week of manufacture	01	00000001	0000001	
11	Year of manufacture	10	00010000	0000016	
12	EDID Structure Ver.	01	00000001	0000001	
13	EDID revision #	03	00000011	0000003	
14	Video input def. (digital I/P, non-TMDS, CRGB)	80	10000000	0000128	
15	Max H image size (rounded to cm)	25	00100101	0000037	
16	Max V image size (rounded to cm)	17	00010111	0000023	
17	Display Gamma (=gamma*100)-100	78	01111000	0000120	
18	Feature support (no DPMS, Active OFF, RGB, tmg Blk# 1)	0A	00001010	0000010	
19	Red/green low bits (Lower 2:2:2 bits)	6B	01101011	0000107	
1A	Blue/white low bits (Lower 2:2:2 bits)	E5	11100101	0000229	
1B	Red x (Upper 8 bits)	A7	10100111	0000167	
1C	Red y/ highER 8 bits	56	01010110	0000086	
1D	Green x	4C	01001100	0000076	
1E	Green y	9B	10011011	0000155	
1F	Blue x	25	00100101	0000037	
20	Blue y	12	00010010	0000018	
21	White x	50	01010000	0000080	
22	White y	54	01010100	0000084	
23	Established timing 1	00	00000000	0000000	





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24	Established timing 2	00	00000000	0000000	
25	Established timing 3	00	00000000	0000000	
26	Standard timing #1	01	00000001	0000001	
27		01	00000001	0000001	
28	Standard timing #2	01	00000001	0000001	
29		01	00000001	0000001	
2A	Standard timing #3	01	00000001	0000001	
2B		01	00000001	0000001	
2C	Standard timing #4	01	00000001	0000001	
2D		01	00000001	0000001	
2E	Standard timing #5	01	00000001	0000001	
2F		01	00000001	0000001	
30	Standard timing #6	01	00000001	0000001	
31		01	00000001	0000001	
32	Standard timing #7	01	00000001	0000001	
33		01	00000001	0000001	
34	Standard timing #8	01	00000001	0000001	
35		01	00000001	0000001	
36	Pixel Clock/10000 LSB	AB	10101011	0000171	
37	Pixel Clock/10000 USB	22	00100010	0000034	
38	Horz active Lower 8bits	A0	10100000	0000160	
39	Horz blanking Lower 8bits	A0	10100000	0000160	
3A	HorzAct:HorzBlnk Upper 4:4 bits	50	01010000	0000080	
3B	Vertical Active Lower 8bits	84	10000100	0000132	
3C	Vertical Blanking Lower 8bits	1A	00011010	0000026	
3D	Vert Act : Vertical Blanking (upper 4:4 bit)	30	00110000	0000048	
3E	HorzSync. Offset	40	01000000	0000064	
3F	HorzSync.Width	20	00100000	0000032	
40	VertSync.Offset : VertSync.Width	36	00110110	0000054	
41	Horz&Vert Sync Offset/Width Upper 2bits	0	00000000	0000000	
42	Horizontal Image Size Lower 8bits	6F	01101111	0000111	
43	Vertical Image Size Lower 8bits	E6	11100110	0000230	
44	Horizontal & Vertical Image Size (upper 4:4 bits)	10	00010000	0000016	
45	Horizontal Border (zero for internal LCD)	00	00000000	0000000	
46	Vertical Border (zero for internal LCD)	00	00000000	0000000	
47	Signal (non-intr, norm, no stero, sep sync, neg pol)	18	00011000	0000024	
48	Detailed timing/monitor	00	00000000	0000000	
49	descriptor #2	00	00000000	0000000	
4A		00	00000000	0000000	



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4B		0F	00001111	0000015	
4C		00	00000000	0000000	
4D		00	00000000	0000000	
4E		00	00000000	0000000	
4F		00	00000000	0000000	
50		00	00000000	0000000	
51		00	00000000	0000000	
52		00	00000000	0000000	
53		00	00000000	0000000	
54		00	00000000	0000000	
55		00	00000000	0000000	
56		00	00000000	0000000	
57		00	00000000	0000000	
58		00	00000000	0000000	
59		20	00100000	0000032	
5A	Detailed timing/monitor	00	00000000	0000000	
5B	descriptor #3	00	00000000	0000000	
5C		00	00000000	0000000	
5D		FE	11111110	0000254	
5E		00	00000000	0000000	
5F	Manufacture	41	01000001	0000065	A
60	Manufacture	55	01010101	0000085	U
61	Manufacture	4F	01001111	0000079	O
62		0A	00001010	0000010	
63		20	00100000	0000032	
64		20	00100000	0000032	
65		20	00100000	0000032	
66		20	00100000	0000032	
67		20	00100000	0000032	
68		20	00100000	0000032	
69		20	00100000	0000032	
6A		20	00100000	0000032	
6B		20	00100000	0000032	
6C	Detailed timing/monitor	00	00000000	0000000	
6D	descriptor #4	00	00000000	0000000	
6E		00	00000000	0000000	
6F		FE	11111110	0000254	
70		0	00000000	0000000	
71	Manufacture P/N	42	01000010	0000066	B
72	Manufacture P/N	31	00110001	0000049	1
73	Manufacture P/N	37	00110111	0000055	7
74	Manufacture P/N	30	00110000	0000048	0
75	Manufacture P/N	50	01010000	0000080	P



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76	Manufacture P/N	57	01010111	0000087	W
77	Manufacture P/N	30	00110000	0000048	0
78	Manufacture P/N	37	00110111	0000055	7
79	Manufacture P/N	20	00100000	0000032	
7A	Manufacture P/N	56	01010110	0000086	V
7B	Manufacture P/N	30	00110000	0000048	0
7C		20	00100000	0000032	
7D		0A	00001010	0000010	
7E	Extension Flag	00	00000000	0000000	
7F	Checksum	B8	10111000	184	