Product Specification
AU OPTRONICS CORPORATION

(V) Preliminary Specifications
(   ) Final Specifications

Module	14.0"(13.97") HD 16:9 Color TFT-LCD with LED Backlight design
Model Name	B140XTK01.0 (HW:1A)
Note ( )	*oTP Display*

Customer	Date
Checked & Approved by	**Date**

Note: This Specification is subject to change without notice.

Approved by	Date
Jonken Fan	2015/01/19
Prepared by	**Date**
Wade Chou	2015/01/19

**NBBU Marketing Division
AU Optronics corporation**

Contents

Record of Revision

Version and Date	Page	Old description	New Description	Remark
0.0 2014/07/07	All	First Edition for Customer		
0.1 2014/11/05	6, 20		1. Update Color Chromaticity 2. Touch panel power supply (5V)	
0.2 2014/11/11	16		1. update backlight input signal characteristics: LED Power Supply(5V ~ 21V)	
0.3 2014/12/24	19 29~32		1. Shipping label format 2. EDID description 3. Pin Assignment: PIN3 & PIN4	
0.4 2014/12/31	27		Update LCM Outline Dimension	
0.5 2015/01/19	6		1. Update Color Chromaticity	

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

10) 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.

11) 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.

12) Disconnecting power supply before handling LCD modules, it can prevent electric shock, DO NOT TOUCH the electrode parts, cables, connectors and LED circuit part of TFT module that a LED light bar build in as a light source of back light unit. It can prevent electrostatic breakdown.

2. General Description

B140XTK01.0 is a Color Active Matrix Liquid Crystal Display composed of a TFT LCD panel, a driver circuit, and LED backlight system. The screen format is intended to support the 16:9 HD, 1366(H) x768(V) screen and 262k colors (RGB 6-bits data driver) with LED backlight driving circuit. All input signals are eDP (Embedded DisplayPort) interface compatible.

B140XTK01.0 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]	354.95		
Active Area	[mm]	309.4/ X 173.95		
Pixels H x V		1366 x 3(RGB) x 768		
Pixel Pitch	[mm]	0.2265 x 0.2265		
Pixel Format		R.G.B. Vertical Stripe		
Display Mode		A Normally White		
White Luminance (ILED=23mA) (Note: ILED is LED current)	[cd/m^2]	200 typ. (5 points average) 170 min. (5 points average)		
Luminance Uniformity		1.25 max. (5 points)		
Contrast Ratio		500 typ		
Response Time	[ms]	8 typ / 16 Max		
Nominal Input Voltage VDD	[Volt]	+3.3 typ.		
Power Consumption	[Watt]	3.1W (include Logic & BLU @ Mosaic Pattern)		
Weight	[Grams]	270 g max		
Physical Size (without cover lens)	[mm]		Min.	Typ.	Max.
		Length	319.90	320.40	320.90
		Width	204.60	205.10	205.60
		Thickness	-	-	3.0 (Panel Side) 3.2 (PCBA Side)
Electrical Interface		1 Lane eDP 1.2		
Glass Thickness	[mm]	0.4		

Surface Treatment		Glare, Hardness 3H
Support Color		262K colors (RGB 6-bit)

Temperature Range
   Operating
   Storage (Non-Operating)
	[^{o}C]
	[^{o}C]
		0 to +50
		-20 to +60

RoHS Compliance		RoHS Compliance

2.2 General Touch Specification

Item	Spec	Unit
Type of Touch Sensor	Projective Capacitive (on cell)	
Interface	USB & I2C	
Report Rate	Follow win8 – 100Hz	Hz
Multi-Touch Point	10 points	
Input method	Finger	
Touch panel sensor IC	Raydium or compatible	
Channel	44 x 76	
Distance between 2 point	Follow win8	mm
TP F/W version	TBD	
TP Power Consumption	Active Mode: TBD	mW
	Idle Mode: TBD	mW
	Sleep Mode:TBD	mW

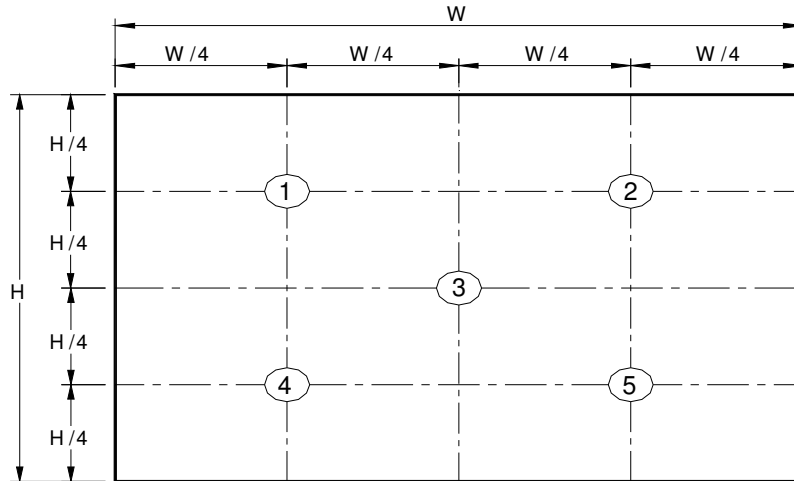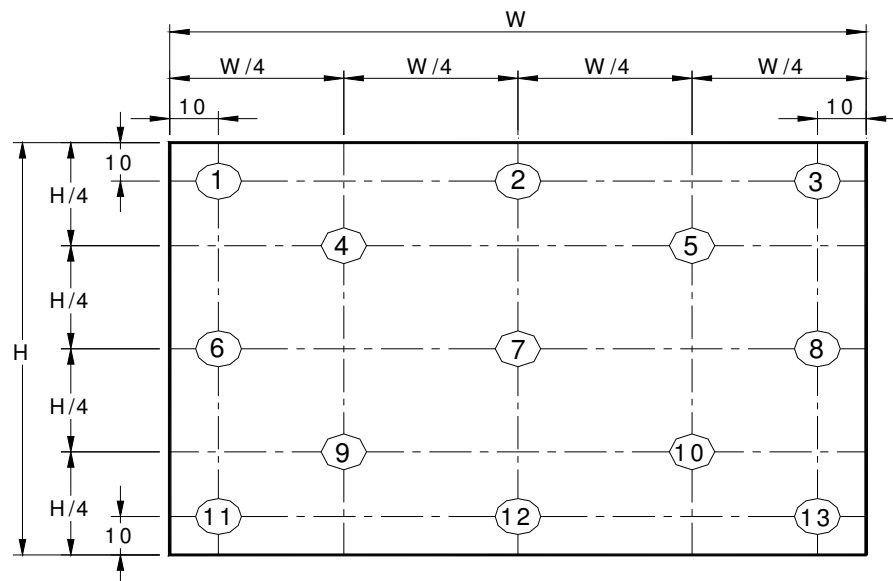## 2.3 Optical Characteristics

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

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit	Note
White Luminance ILED=23mA (Base Panel Only)			5 points average	170	200	-	cd/m2	1, 4, 5.
Viewing Angle		θR θL	Horizontal (Right) CR = 10 (Left)	40 40	45 45	- -	degree	4, 9
		ψH ψL	Vertical (Upper) CR = 10 (Lower)	10 30	15 35	- -		
Luminance Uniformity		δ5P	5 Points	-	-	1.25		1, 3, 4
Luminance Uniformity		δ13P	13 Points	-	-	1.60		2, 3, 4
Contrast Ratio		CR		400	500	-		4, 6
Cross talk		%				4		4, 7
Response Time		TRT	Rising + Falling	-	8	16		
Color / Chromaticity Coodinates	**Red**	Rx	CIE 1931	0.536	0.566	0.596		4
		Ry		0.311	0.341	0.371		
	Green	Gx		0.310	0.340	0.370		
		Gy		0.530	0.570	0.600		
	Blue	Bx		0.129	0.159	0.189		
		By		0.094	0.124	0.154		
	White	Wx		0.283	0.313	0.343		
		Wy		0.299	0.329	0.359		
NTSC		%		-	45	-		

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

W

W / 4   W / 4   W / 4   W / 4

H / 4

1   2

H / 4

H   3

H / 4

4   5

H / 4

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

W

W / 4   W / 4   W / 4   W / 4

10   10

10

1   2   3

H / 4

4   5

H / 4

H   6   7   8

H / 4

9   10

H / 4

11   12   13

10

Note 3: The luminance uniformity of 5 or13 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, and it should be measured in the center of screen.

Photo detector

Field=2°

50 cm

LCD Panel

TFT-LCD Module

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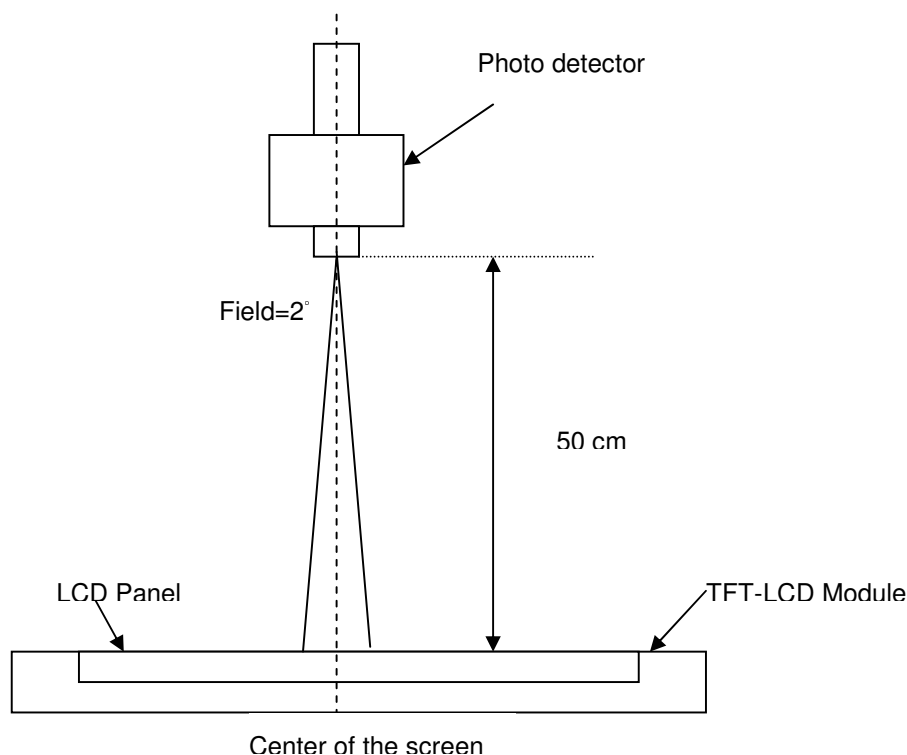
Note 5： Definition of Average Luminance of White (Y_L):

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.

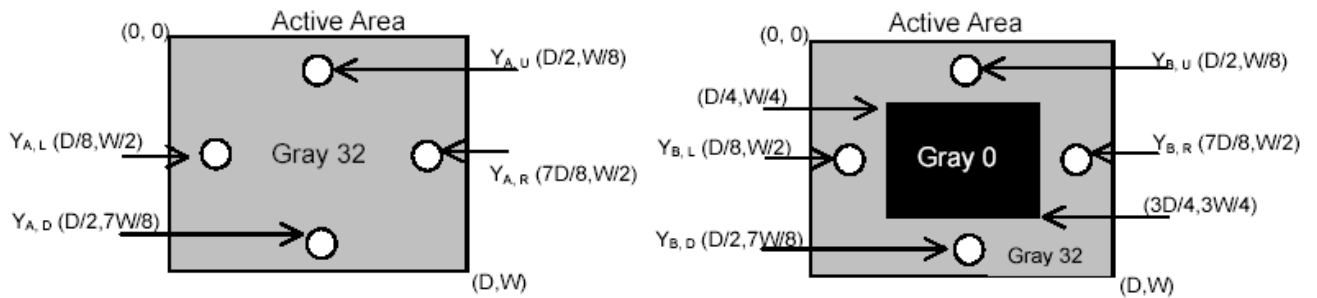$$\text{Contrast ratio (CR)}= \frac{\text{Brightness on the "White" state}}{\text{Brightness on the "Black" state}}$$

Note 7： Definition of Cross Talk (CT)

CT = | Y_B – Y_A | / Y_A × 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)
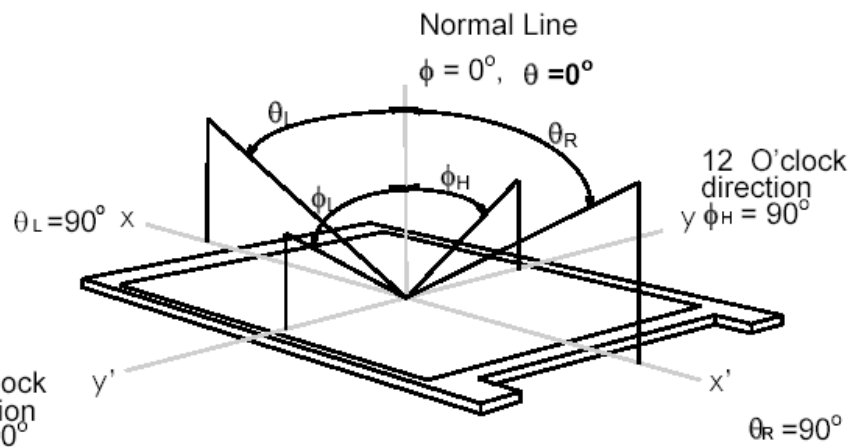

Note 8: Definition of response time:

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.
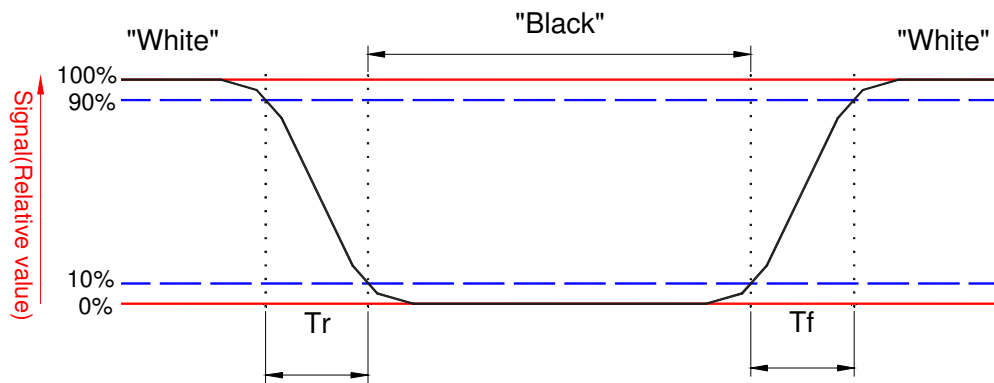
Note 9. Definition of viewing angle

Viewing angle is the

measurement of contrast ratio $\geqq 10$, 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° (θ) horizontal left and right and 90° (Φ) 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 inches wide Color TFT/LCD 40 Pin (One CH/connector Module)
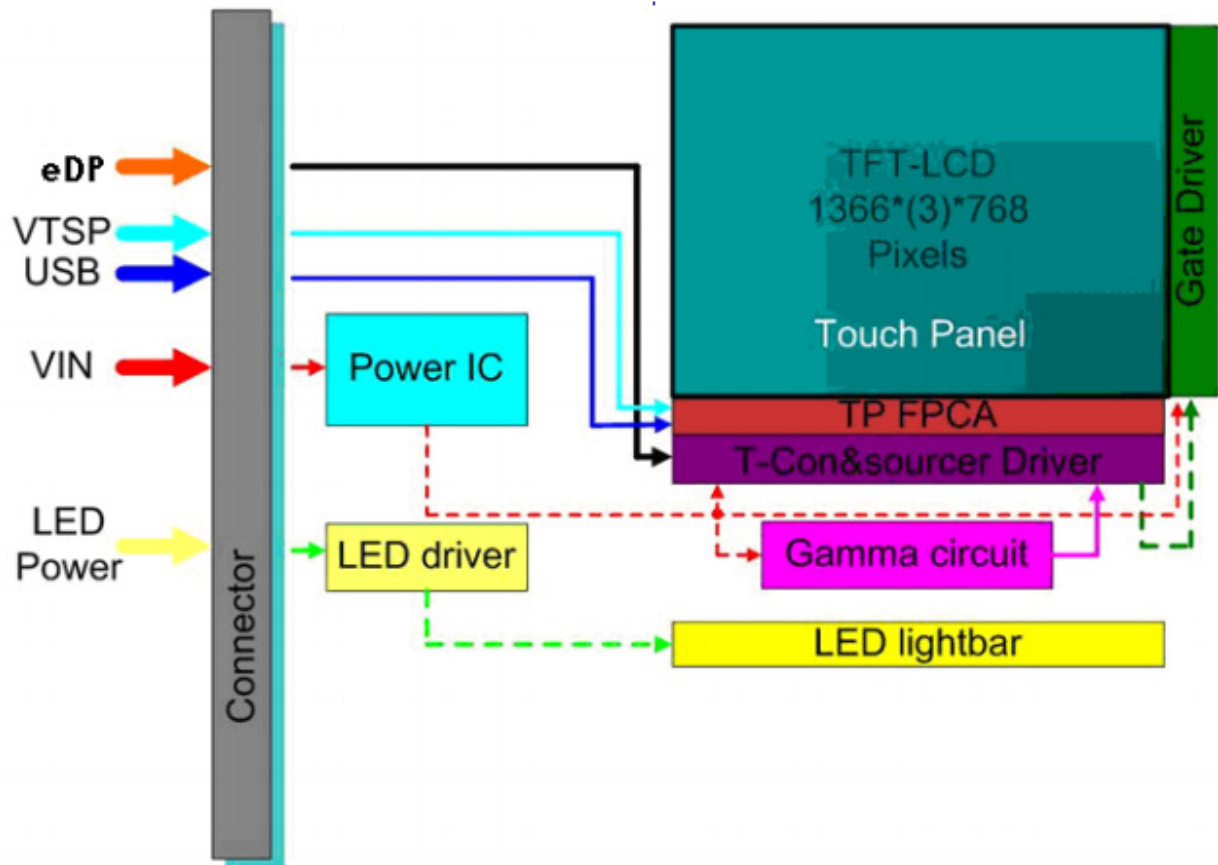
4. Absolute Maximum Ratings

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 Touch Sensor

Item	Symbol	Min	Max	Unit	Conditions
Touch Sensor Power Voltage	Vin	3.15	3.6	[Volt]	

4.3 Absolute Ratings of Environment

Item	Symbol	Min	Max	Unit	Conditions
Operating	TOP	0	+50	[^{o}C]	Note 4
Operation Humidity	HOP	5	95	[%RH]	Note 4
Storage Temperature	TST	-20	+60	[^{o}C]	Note 4
Storage Humidity	HST	5	95	[%RH]	Note 4

Note 1: At Ta (25℃)

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

Note 3: LED specification refer to section 5.2

Note 4: For quality performance, please refer to AUO IIS (Incoming Inspection Standard).
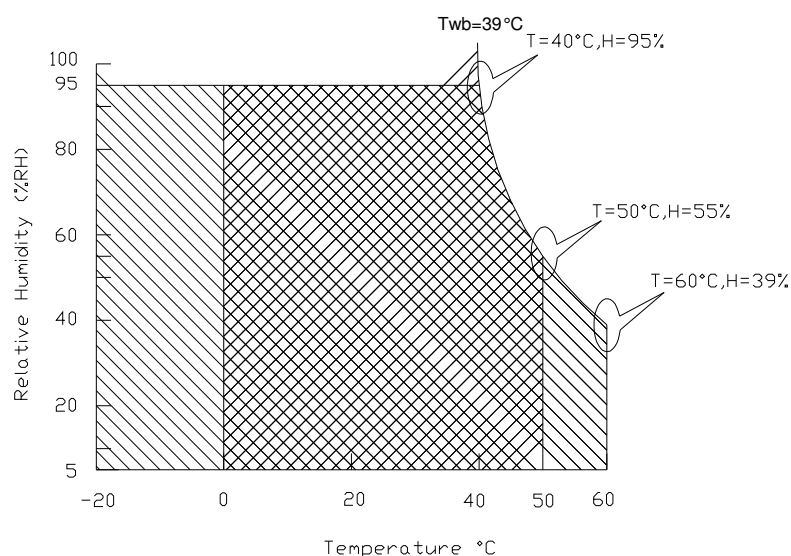
5. Electrical Characteristics

5.1 TFT LCD Module

5.1.1 Power Specification

Input power specifications are as follows:

The power specification are measured under 25℃ and frame frenquency under 60Hz

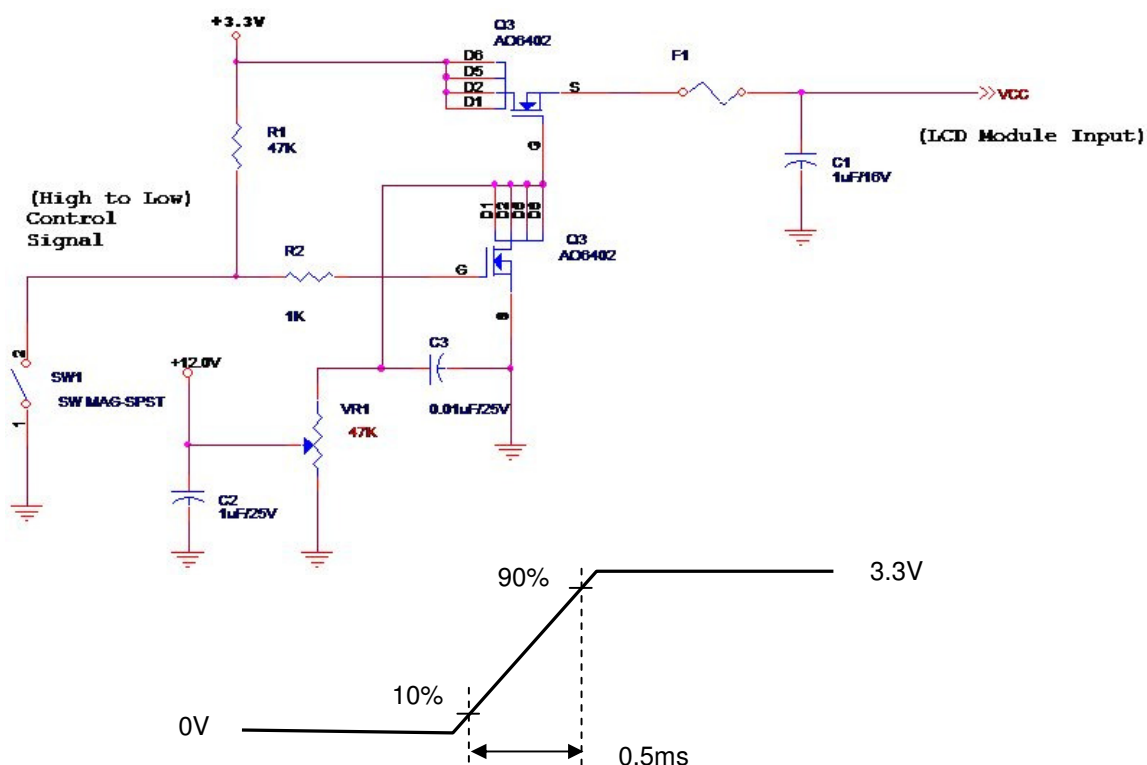| Symble	Parameter	Min	Typ	Max	Units	Note
VDD	Logic/LCD Drive Voltage	3.0	3.3	3.6	[Volt]	
PDD	VDD Power	-	-	0.7	[Watt]	Note 1
IDD	IDD Current	-	-	212	[mA]	Note 1
IRush	Inrush Current	-	-	2000	[mA]	Note 2
VDDrp	Allowable Logic/LCD Drive Ripple Voltage	-	-	100	[mV] p-p	

Note 1 : Maximum Measurement Condition：White Pattern at 3.3V driving voltage. ($P_{max}=V_{3.3} \times I_{white}$)

Note 2：Measure Condition

Vin rising time

5.1.2 Signal Electrical Characteristics

Signal electrical characteristics are as follows:
Display Port main link signal:

Differential pair VD+ , VD-
Which is one Display port
Main link

VCM of Display port
Main link

VD+

VCM

VDiff

VD-

$Vdiff_{P-P} = [(VD+) - (VD-)] \times 2$

V D+ - VD-

0V
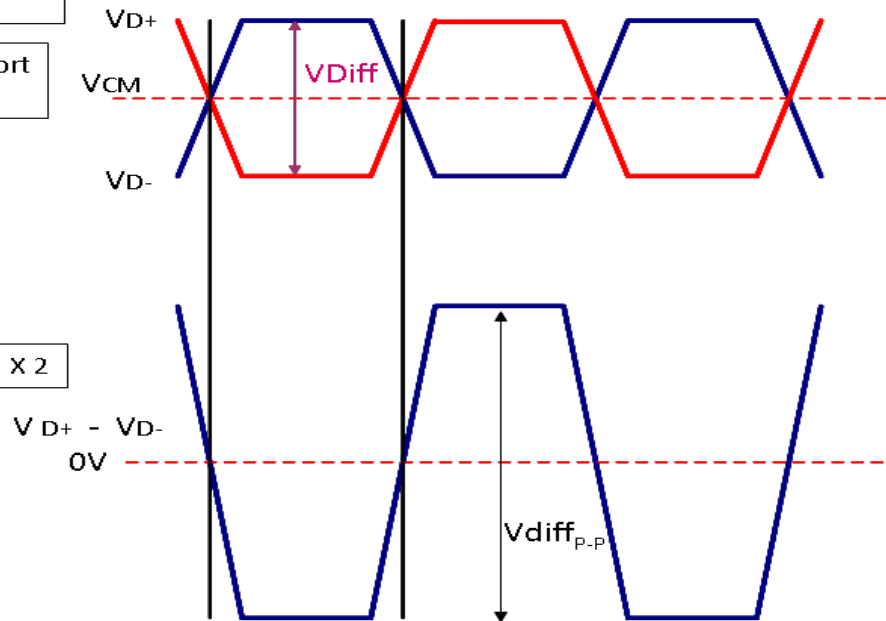
Vdiff$_{P-P}$

Display port main link					
		Min	Typ	Max	unit
VCM	RX input DC Common Mode Voltage	0	-	2	V
VDiff$_{P-P}$	Peak-to-peak Voltage at a receiving Device	120	-		mV

Follow as VESA display port standard V1.1a

Display Port AUX_CH signal:

Differential AUX+ , AUX-
Which is Display pot AUX_CH

AUX+

VCM

VDiff$_{P-P}$

AUX-

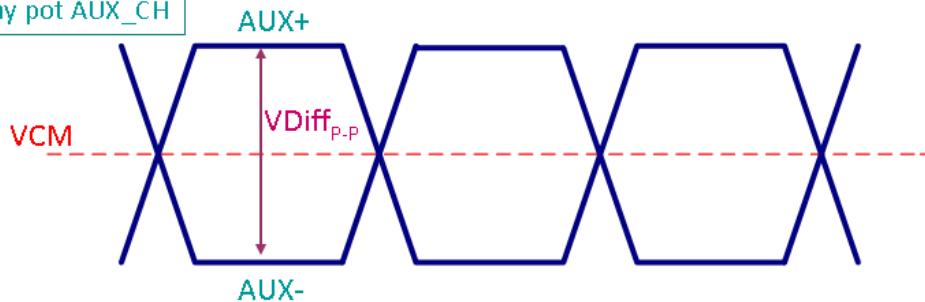| Display port AUX_CH				
		Min	Typ	Max	unit
VCM	AUX DC Common Mode Voltage	0	-	2	V
VDiff$_{P-P}$	AUX Peak-to-peak Voltage at a receiving Device	0.32	-	1.36	V

Follow as VESA display port standard V1.1a.

Display Port VHPD signal:

Display port VHPD				
		Min	Typ	Max	unit
VHPD	HPD Voltage	-	-	3.6	V

Follow as VESA display port standard V1.1a.

5.2 Backlight Unit

5.2.1 LED characteristics

Parameter	Symbol	Min	Typ	Max	Units	Condition
Backlight Power Consumption	PLED	-	-	2.2	[Watt]	(Ta=25℃), Note 1
LED Life-Time	N/A	15,000	-	-	Hour	(Ta=25℃), Note 2 I$_F$=20 mA

Note 1: Calculator value for reference P$_{LED}$ = V$_F$ (Normal Distribution) * I$_F$ (Normal Distribution) / Efficiency

Note 2: The LED life-time define as the estimated time to 50% degradation of initial luminous.

5.2.2 Backlight input signal characteristics

Parameter	Symbol	Min	Typ	Max	Units	Remark
LED Power Supply	VLED (Note 1)	5.0 (Note 2)	12.0	21.0	[Volt]	Define as Connector Interface (Ta=25℃)
LED Enable Input High Level	VLED_EN	2.5	-	5.5	[Volt]	

LED Enable Input Low Level		-	-	0.5	[Volt]
PWM Logic Input High Level	VPWM_EN	2.5	-	5.5	[Volt]
PWM Logic Input Low Level		-	-	0.5	[Volt]
PWM Input Frequency	FPWM	150	1K	10K	Hz
PWM Duty Ratio	Duty	5	--	100	%

Note 1 : Recommend system pull up/down resistor no bigger than 10kohm

Note 2 : measured in panel VIN

5.3 Touch Sensor Power Consumption

Items	Symbol	Specifications			Unit	Notes
		Min.	Typ.	Max.		
Touch Panel Power Supply	VDD	-	-	3.6	V	

6. Signal Interface Characteristic

6.1 Pixel Format Image

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

6.2 Integration Interface Requirement

6.2.1 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.

Connector Name / Designation	For Signal Connector
Manufacturer	IPEX or Compatible
Type / Part Number	I-PEX 20455-040E-12R or Compatible
Mating Housing/Part Number	IPEX or Compatible

### 6.2.2 Pin Assignment (with Touch Sensor Pin Assignment)

PIN NO	Symbol	Function
1	NC	No Connect (Reserved for DCR)
2	H_GND	High Speed Ground
3	NC	No Connect
4	NC	No Connect
5	H_GND	High Speed Ground
6	Lane0_N	Comp Signal Link Lane 0
7	Lane0_P	True Signal Link Lane 0
8	H_GND	High Speed Ground
9	AUX_CH_P	True Signal Auxiliary Ch.
10	AUX_CH_N	Comp Signal Auxiliary Ch.
11	H_GND	High Speed Ground
12	LCD_VCC	LCD logic and driver power
13	LCD_VCC	LCD logic and driver power
14	LCD_Self_Test or NC	LCD Panel Self Test Enable (Optional)
15	LCD_GND	LCD logic and driver ground
16	LCD_GND	LCD logic and driver ground
17	HPD	HPD signal pin
18	BL_GND	Backlight ground
19	BL_GND	Backlight ground

| 20	BL_GND	Backlight ground
21	BL_GND	Backlight ground
22	BL_Enable	Backlight On / Off
23	BL_PWM_DIM	System PWM signal Input
24	NC	No connect (Reverse for AUO TEST only)
25	NC	No connect (Reverse for AUO TEST only)
26	BL_PWR	Backlight power (5V~21V)
27	BL_PWR	Backlight power (5V~21V)
28	BL_PWR	Backlight power (5V~21V)
29	BL_PWR	Backlight power (5V~21V)
30	NC	No Connect (Reserved for CM)
31	TP_D-	USB Data- for Touch
32	TP_D+	USB Data+ for Touch
33	GND	Ground–Shield
34	VTSP	Touch panel power supply (5V)
35	VTSP	Touch panel power supply (5V)
36	NC/TP_EN	TP Enable (active high)
37	TP_CLK	I2C Clock for Touch (NC for USB input)
38	TP_Data	I2C Data for Touch (NC for USB input)
39	INT	Interrupt for Touch (NC for USB input)
40	RST	Reset for Touch (NC for USB input)

Connector

Pin 40 **Pin 1**
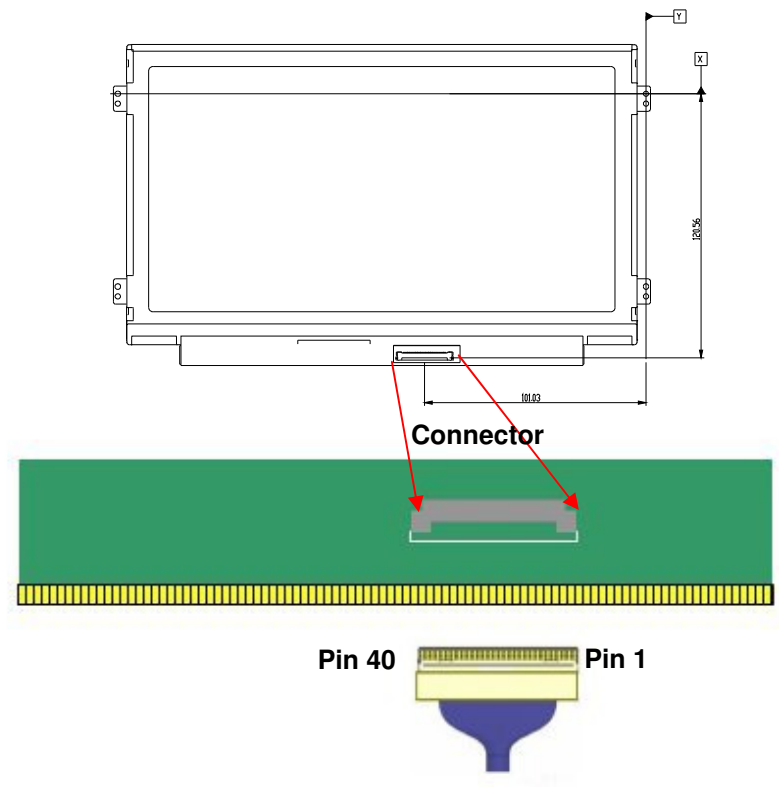
Note1: Start from right side.
Note2: Input signals shall be low or High-impedance state when VDD is off.
Internal circuit of **eDP inputs** are as following.
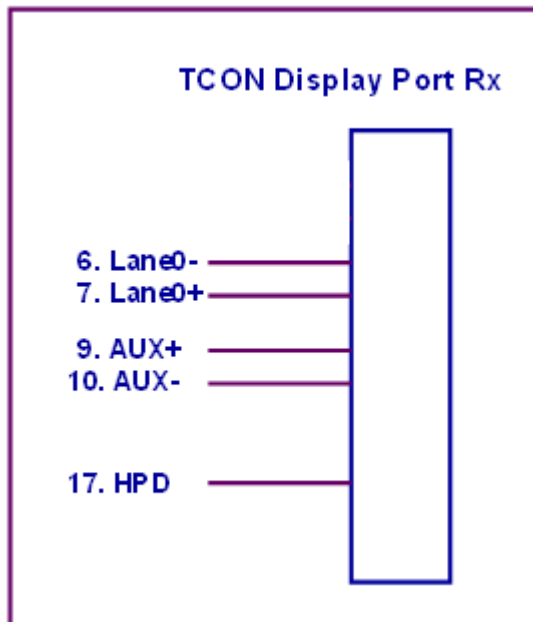
6.3 Interface Timing

6.3.1 Timing Characteristics

Basically, interface timings should match the 1366x768 /60Hz manufacturing guide line timing.

Parameter		Symbol	Min.	Typ.	Max.	Unit
Frame Rate		-	-	60	-	Hz
Clock frequency		$1/T_{Clock}$	69.9	72	80	MHz
Vertical Section	**Period**	T_V	788	824	768+A	T_{Line}
	Active	T_{VD}	768			
	Blanking	T_{VB}	20	56	A	
Horizontal Section	**Period**	T_H	1416	1456	1366+B	T_{Clock}
	Active	T_{HD}	1366			
	Blanking	T_{HB}	50	90	B	

Note : 1. DE mode only

2. The maximum clock frequency = (1366+B)*(768+A)*60 < 80MHz

6.4 Power ON/OFF Sequence

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

Display Port panel power sequence:
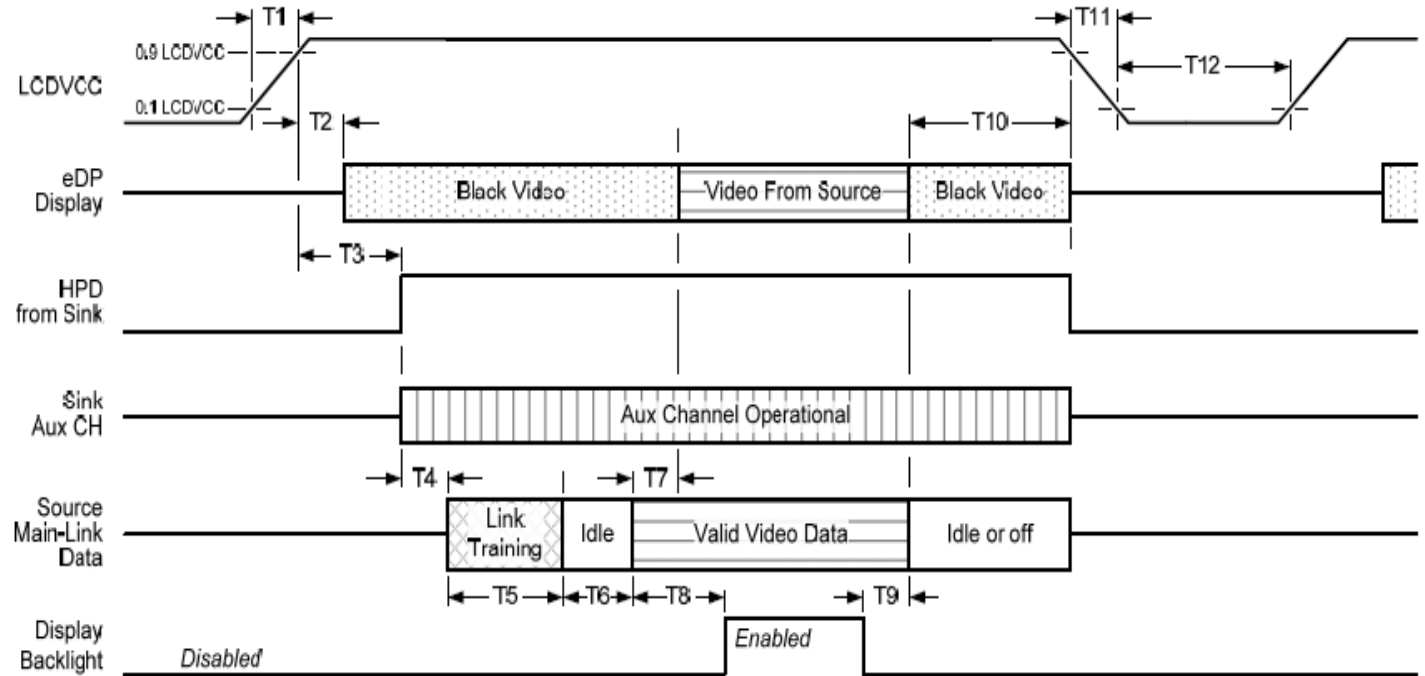
Display port interface power up/down sequence, normal system operation

Display Port AUX_CH transaction only:

Display port interface power up/down sequence, AUX_CH transaction only

Display Port panel power sequence timing parameter:

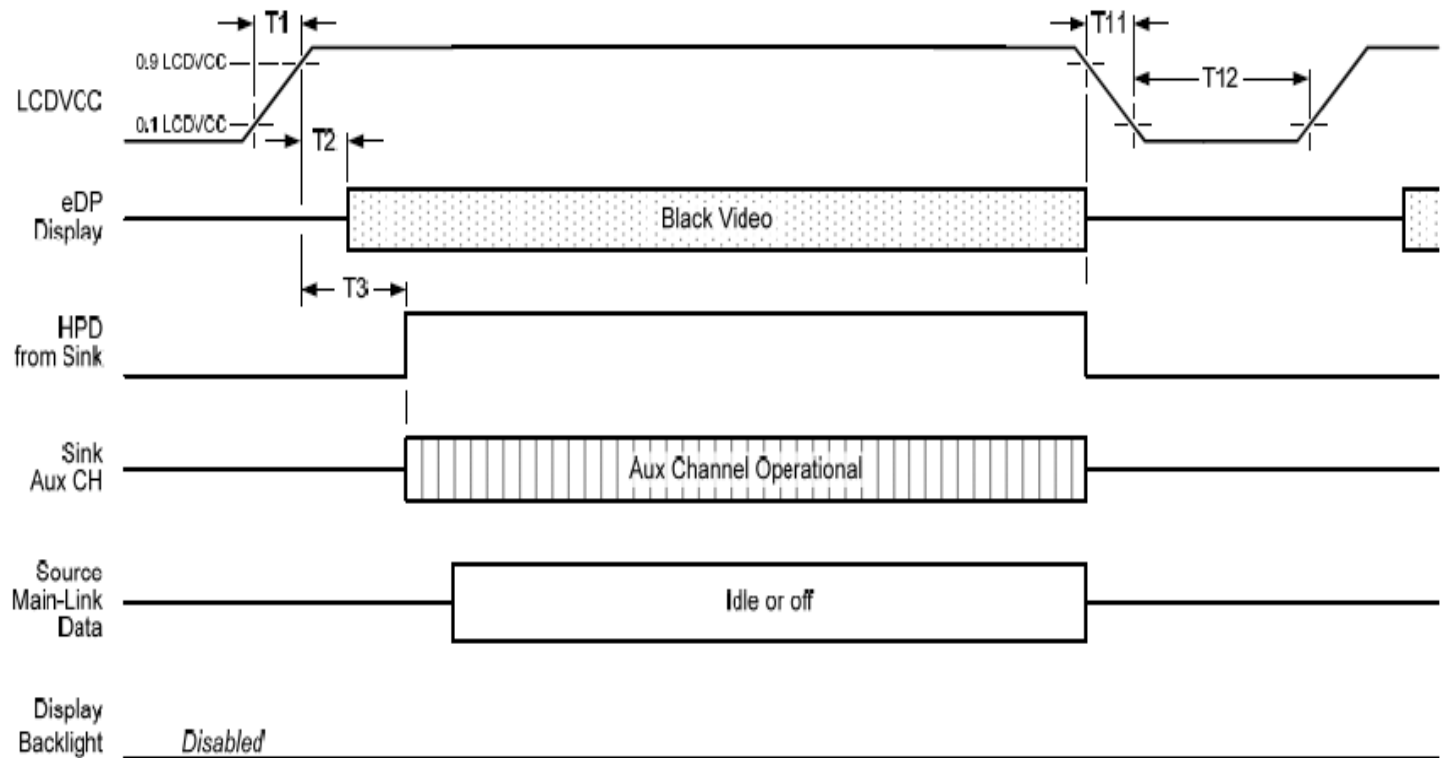| Timing parameter	Description	Reqd. by	Limits			Notes
			Min.	Typ.	Max.	
T1	power rail rise time, 10% to 90%	source	0.5ms		10ms	
T2	delay from LCDVDD to black video generation	sink	0ms		200ms	prevents display noise until valid video data is received from the source
T3	delay from LCDVDD to HPD high	sink	0ms		200ms	sink AUX_CH must be operational upon HPD high.
T4	delay from HPD high to link training initialization	source				allows for source to read link capability and initialize.
T5	link training duration	source				dependant on source link to read training protocol.
T6	link idle	source				Min accounts for required BS-Idle pattern. Max allows for source frame synchronization.
T7	delay from valid video data from source to video on display	sink	0ms		50ms	max allows sink validate video data and timing.
T8	delay from valid video data from source to backlight enable	source				source must assure display video is stable.
T9	delay from backlight disable to end of valid video data	source				source must assure backlight is no longer illuminated.
T10	delay from end of valid video data from source to power off	source	0ms		500ms	
T11	power rail fall time, 905 to 10%	source			10ms	
T12	power off time	source	500ms			

Note1: The sink must include the ability to generate black video autonomously. The sink must automatically enable black video under the following conditions:
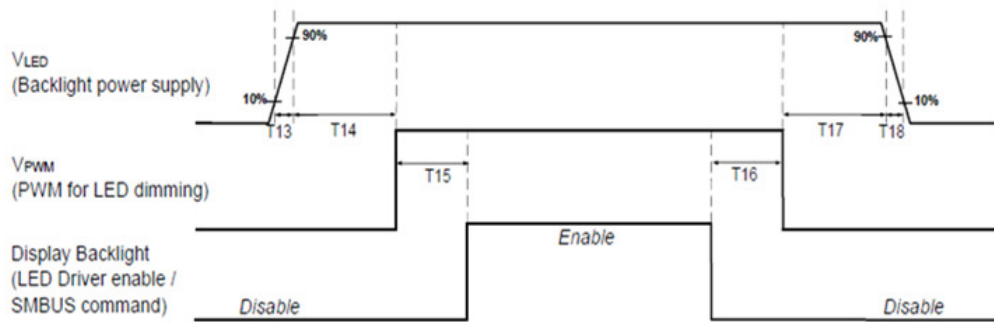 -upon LCDVDD power on (with in T2 max)-when the "Novideostream_Flag" (VB-ID Bit 3) is received from the source (at the end of T9).
  -when no main link data, or invalid video data, is received from the source. Black video must be displayed within 64ms (typ) from the start of either condition. Video data can be deemed invalid based on MSA and timing information, for example.

Note 2: The sink may implement the ability to disable the black video function, as described in Note 1, above, for system development and debugging purpose.

Note 3: The sink must support AUX_CH polling by the source immediately following LCDVDD power on without causing damage to the sink device (the source can re-try if the sink is not ready). The sink must be able to respond to an AUX_CH transaction with the time specified within T3 max.

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Display Port panel B/L power sequence timing parameter:

	Min (ms)	Max (ms)
T13	0.5	10
T14	10	-
T15	10	-
T16	10	-
T17	10	-
T18	0.5	10
T19	1*	-
T20	1*	-

Note : When the adapter is hot plugged, the backlight power supply sequence is shown as below.

Seamless change: T19/T20 = 5xT$_{PWM}$*

*T$_{PWM}$= 1/PWM Frequency

7. Panel Reliability Test

7.1 Vibration Test

Test Spec:

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

7.2 Shock Test

Test Spec:

- Test method:　　Non-Operation
- Acceleration:　　220 G , Half sine wave
- Active time:　　2 ms
- Pulse:　　X,Y,Z .one time for each side

7.3 Reliability Test

Items	Required Condition	Note
Temperature Humidity Bias	Ta= 40℃, 90%RH, 240h	
High Temperature Operation	Ta= 60℃, Dry, 240h	
Low Temperature Operation	Ta=0℃, 240h	
High Temperature Storage	Ta= 60℃, 240h	
Low Temperature Storage	Ta= -20℃, 240h	
Thermal Shock Test	Ta=-20℃(30min) ~60℃(30min), 20cycles condition.	
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 LED): 30,000 hours with a confidence level 90%

8. Mechanical Characteristics

8.1 LCM Outline Dimension

Note:
1. All other dimensions in blue are only for reference
2. Red line is metal trace
3. ﾊ POGOﾋ RESTRICTED AREA

Front View

Back View

SHIPPING LABEL

BLU BARCODE AREA
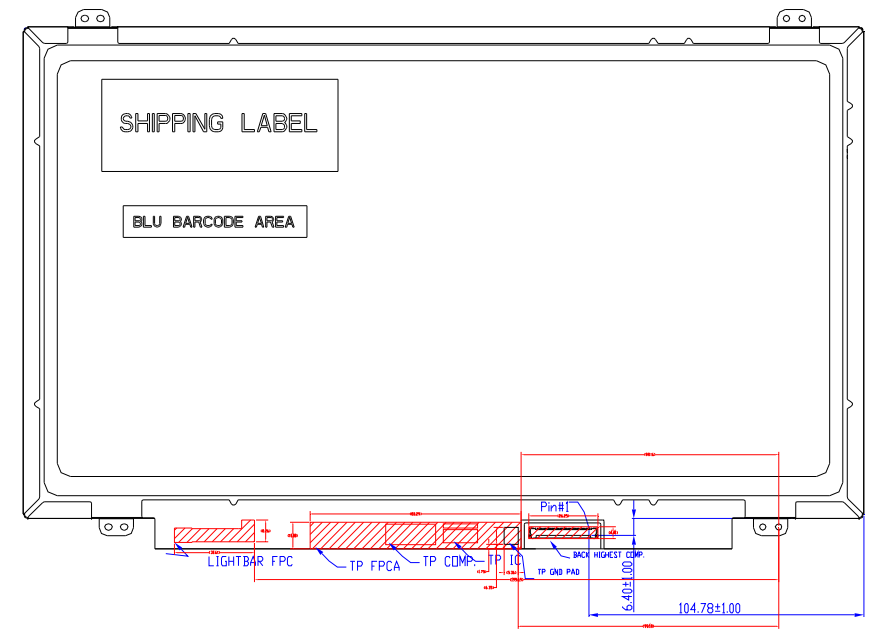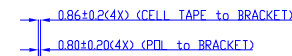
9. Shipping and Package

9.1 Shipping Label Format

Manufactured xx/xx
Model No: **B140XTK01.0**
AU Optronics
MADE IN CHINA (S01)

cUL us
E204356

Pb

RoHS

15

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

B140XTK01.0

9.2 Shipping Package of Palletizing Sequence

Corner Pillar

LABEL

Stretch Film

PET Band

Wooden pallet
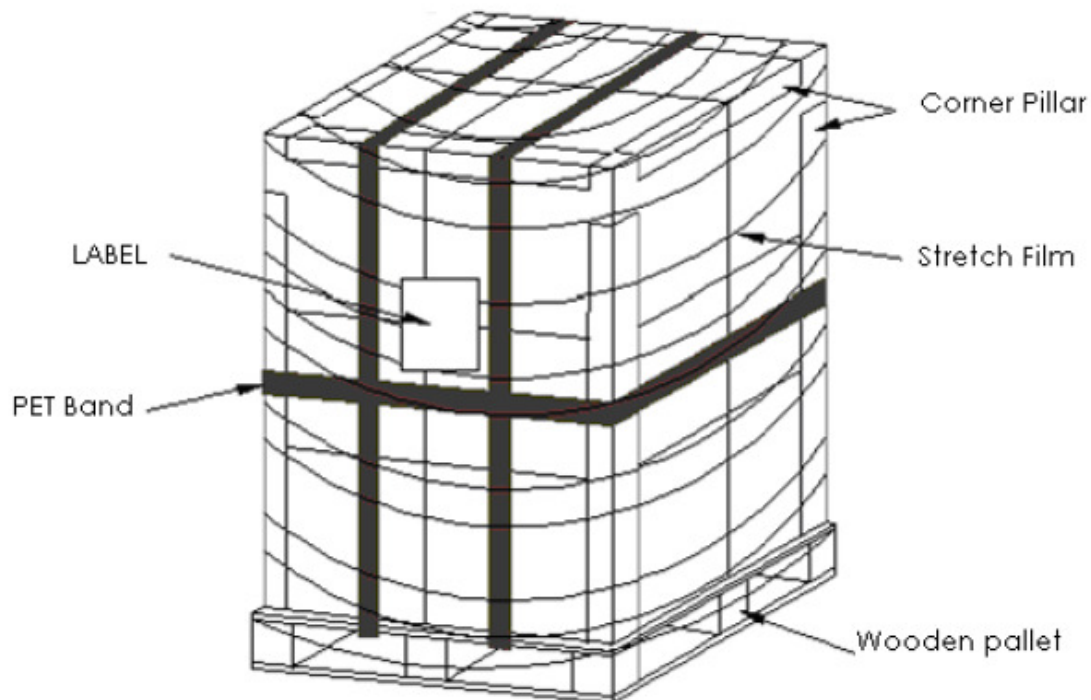
10. Appendix: EDID Description

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	3C	00111100	60
0B	hex, LSB first	10	00010000	16
0C	32-bit ser #	00	00000000	0
0D		00	00000000	0
0E		00	00000000	0
0F		00	00000000	0
10	Week of manufacture	00	00000000	0
11	Year of manufacture	18	00011000	24
12	EDID Structure Ver.	01	00000001	1
13	EDID revision #	04	00000100	4
14	**Video input def.** *(digital I/P, non-TMDS, CRGB)*	95	10010101	149
15	**Max H image size** *(rounded to cm)*	1F	00011111	31
16	**Max V image size** *(rounded to cm)*	11	00010001	17
17	**Display Gamma** *(=(gamma*100)-100)*	78	01111000	120
18	**Feature support** *(no DPMS, Active OFF, RGB, tmg Blk#1)*	02	00000010	2
19	Red/green low bits **(Lower 2:2:2:2 bits)**	9F	10011111	159
1A	Blue/white low bits **(Lower 2:2:2:2 bits)**	E5	11100101	229
1B	Red x **(Upper 8 bits)**	96	10010110	150
1C	Red y/ highER 8 bits	58	01011000	88
1D	Green x	53	01010011	83
1E	Green y	8A	10001010	138
1F	Blue x	26	00100110	38
20	Blue y	24	00100100	36
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

Addr	Description	Hex	Binary	Dec
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	CE	11001110	206
37	Pixel Clock/10000 USB	1D	00011101	29
38	Horz active **Lower 8bits**	56	01010110	86
39	Horz blanking **Lower 8bits**	E2	11100010	226
3A	HorzAct:HorzBlnk **Upper 4:4 bits**	50	01010000	80
3B	Vertical Active **Lower 8bits**	00	00000000	0
3C	Vertical Blanking **Lower 8bits**	1E	00011110	30
3D	Vert Act : Vertical Blanking **(upper 4:4 bit)**	30	00110000	48
3E	HorzSync. Offset	26	00100110	38
3F	HorzSync.Width	16	00010110	22
40	VertSync.Offset : VertSync.Width	36	00110110	54
41	Horz&Vert Sync Offset/Width **Upper 2bits**	00	00000000	0
42	Horizontal Image Size **Lower 8bits**	35	00110101	53
43	Vertical Image Size **Lower 8bits**	AD	10101101	173
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	D4	11010100	212
49	descriptor #2	17	00010111	23
4A		56	01010110	86
4B		E2	11100010	226
4C		50	01010000	80
4D		00	00000000	0
4E		1E	00011110	30
4F		30	00110000	48
50		26	00100110	38
51		16	00010110	22
52		36	00110110	54
53		00	00000000	0
54		35	00110101	53
55		AD	10101101	173
56		10	00010000	16
57		00	00000000	0
58		00	00000000	0
59		18	00011000	24
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	30	00110000	48
75	Manufacture P/N	58	01011000	88
76	Manufacture P/N	54	01010100	84
77	Manufacture P/N	4B	01001011	75
78	Manufacture P/N	30	00110000	48
79	Manufacture P/N	31	00110001	49
7A	Manufacture P/N	2E	00101110	46
7B	Manufacture P/N	30	00110000	48
7C		20	00100000	32
7D		0A	00001010	10
7E	Extension Flag	00	00000000	0
7F	Checksum	20	00100000	32
			SUM	7168