SPECIFICATION

PRODUCT NO. : TCXD156MBLON-68
VERSION : Ver 1.0
ISSUED DATE : 2022-11-30

FOR CUSTOMER:

☐: APPROVAL FOR SPECIFICATION

☐: APPROVAL FOR SAMPLE

DATE	APPROVED BY

Xinli Optronics :

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Record of Revision

Revision	Description	Date
1.0	Initial Release	2022-11-30

1.0 General Descriptions

1.1 Introduction

The TCXD156MBLON-68 is a Color Active Matrix Liquid Crystal Display with a back light system. The matrix uses a-Si Thin Film Transistor as a switching device. This TFT LCD has a 15.6 inch diagonally measured active display area with FHD resolution (1,920 horizontal by 1,080 vertical pixels array).

1.2 Features

- Supported FHD Resolution
- eDP Interface
- Wide View Angle
- Compatible with RoHS Standard

1.3 Product Summary

Items		Specifications	Unit
Screen Diagonal		15.6	inch
Active Area (H x V)		344.16*193.59	mm
Number of Pixels (H x V)		1,920 x 1,080	-
Pixel Pitch (H x V)		0.17925*0.17925	mm
Pixel Arrangement		R.G.B. Vertical Stripe	-
Display Mode		Normally Black	-
White Luminance		450 (Typ.)	cd /m^2
Contrast Ratio		1000 (Typ.)	-
Response Time		30 (Typ.)	ms
Input Voltage		3.3 (Typ.)	V
Power Consumption		4.0 (Max.) @(mosaic Pattern) FV=60Hz	W
		4.2 (Max.) @(worse pattern-sub pixel) FV=60Hz	
Weight		380 (Max.)	g
Outline Dimension (H x V x D)	W/O PCB	359.50(Typ.)x206.5(Typ.)x3.30(Max.)	mm
	W/ PCB	359.50(Typ.)x223.75(Typ.)x3.30(Max.)	mm
Electrical Interface (Logic)		eDP 1.3 with PSR, Single Frame update, MBO feature	-
Support Color		8bit	-
sRGB		100 (Typ.)	%
Surface Treatment		AG,3H	-

1.4 Functional Block Diagram

Figure 1 shows the functional block diagram of the LCD module.

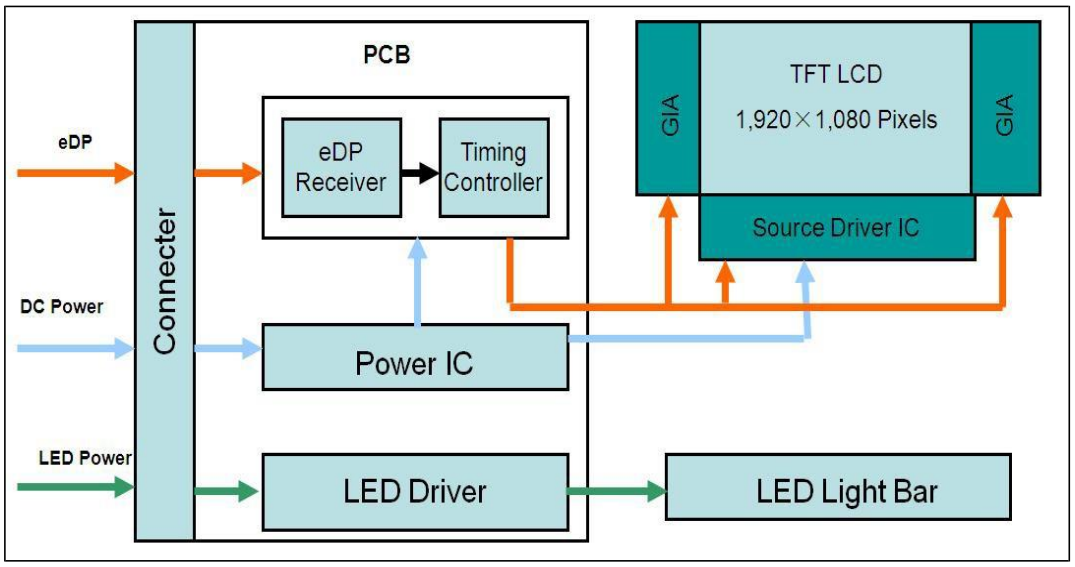


Figure 1 Block Diagram

Note：GIA（Gate In Array）

1.5 Pixel Mapping

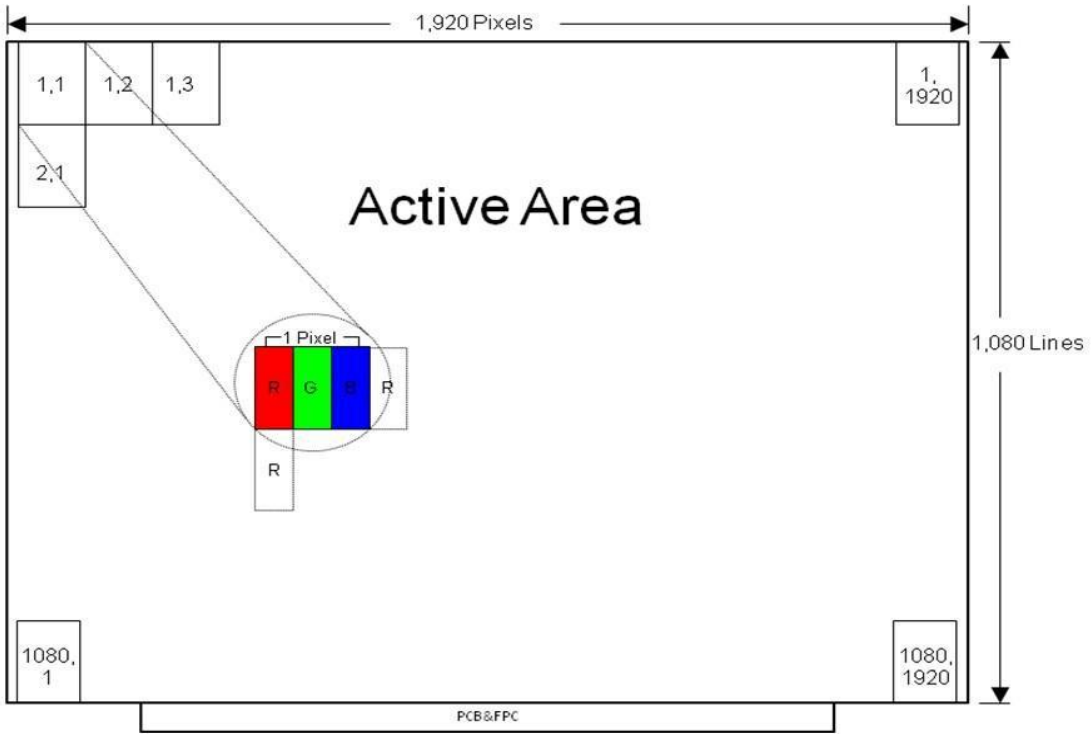


Figure2 Pixel Mapping

2.0 Absolute Maximum Ratings

Table 1 Electrical & Environment Absolute Rating

Item	Symbol	Min.	Max.	Unit	Note
Logic Supply Voltage	V_{DD}	-0.3	3.6	V	(1),(2),(3),(4)
Logic Input Signal Voltage	V_{Signal}	0.3	3.3	V	
Operating Temperature	T_{gs}	0	50	℃	
Storage Temperature	T_a	-20	60	℃	

Note (1) All the parameters specified in the table are absolutemaximum rating values that may cause faulty operation or unrecoverable damage, if exceeded. It is recommended to follow the typical value.

Note (2) All the contents of electro-optical specifications and display fineness are guaranteed under Normal Conditions. All the display fineness should be inspected under normal conditions. Normal conditions are defined as follow: Temperature: 25℃, Humidity: 55± 10%RH.

Note (3) Unpredictable results may occur when it was used in extreme conditions. T_a= Ambient Temperature, T_{gs}= Glass Surface Temperature. All the display fineness should be inspected under normal conditions.

Note (4) Temperature and relative humidity range are shown in the figure below. Wet bulb temperature should be lower than 46℃, and no condensation of water. Besides, protect the module from static electricity.

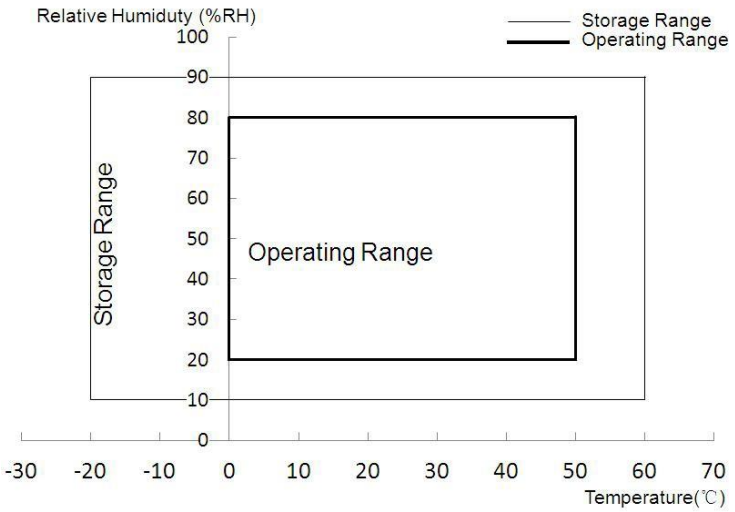


Figure 3 Absolute Ratings of Environment of the LCD Module

3.0 Optical Characteristics

The optical characteristics are measured under stable conditions as following notes.

Table 2 Optical Characteristics

Item	Conditions		Min.	Typ.	Max.	Unit	Note
Viewing Angle （CR≥10）	Horizontal	θ_{x+}	80	85	-	degree	(1),(2),(3),(4),(8)
		θ_{x-}	80	85	-		
	Vertical	θ_{y+}	80	85	-		
		θ_{y-}	80	85	-		
Contrast Ratio	Center		800	1000	-	-	(1),(2),(4),(8) θx=θy=0°
Response Time	Rising + Falling		-	30	35	ms	(1),(2),(5),(8) θx=θy=0°
Color Chromaticity (CIE1931)	White x			0.313		-	(1),(2),(3),(8) θx=θy=0°
	White y			0.329		-	
NTSC	-		-	62	-	%	(1),(2),(3),(8) θx=θy=0°
White Luminance	5 Points Average		400	450	500	cd/m^2	(1),(2),(6),(8) θx=θy=0°
Luminance Uniformity	5 Points		80	-	-	%	(1),(2),(7),(8) θx=θy=0°
	13 Points		65	-	-		
Gamma	-		1.7	2.2	2.7	-	(1),(2) (8)

Note (1) Measurement Setup:

The LCD module should be stabilized at given ambient temperature (25℃) for 30 minutes to avoid abrupt temperature changing during measuring. In order to stabilize the luminance, the measurement should be executed after lighting backlight for 30 minutes in the windless room.

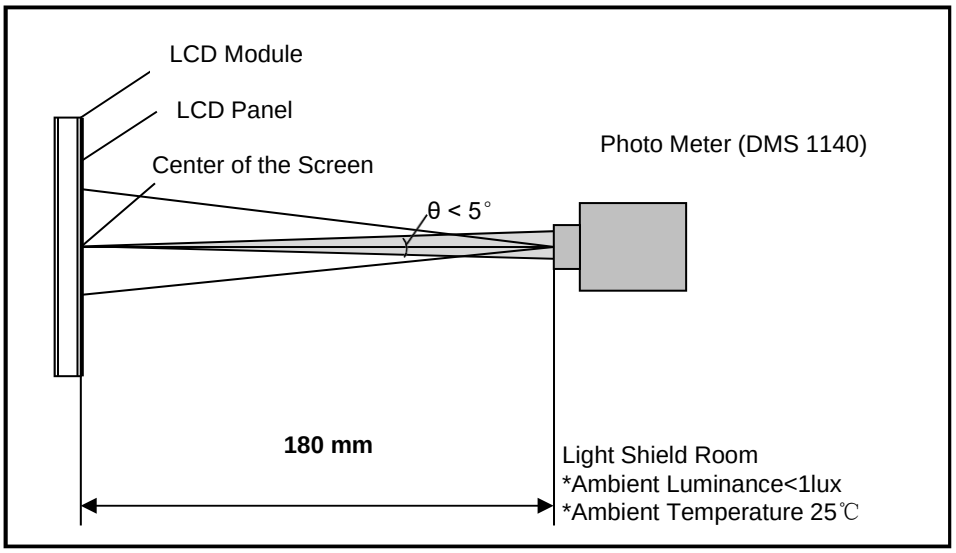


Figure 4 Measurement Setup

Note (2) The LED input parameter setting as:

V_{LED}=(12)V

PWM_LED: Duty 100 %

Note (3) Definition of Viewing Angle

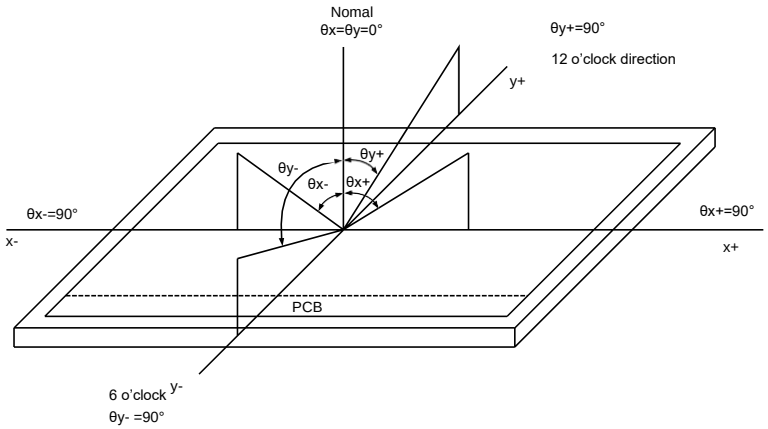


Figure 5 Definition of Viewing Angle

Note (4) Definition of Contrast Ratio (CR)

The contrast ratio can be calculated by the following expression:

Contrast Ratio (CR) = The Luminance of White pattern/ The Luminance of Black pattern

Note (5) Definition of Response Time (T_R, T_F)

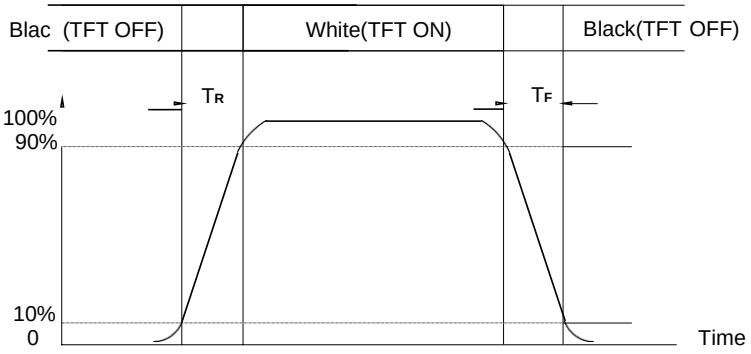


Figure 6 Definition of Response Time

Note (6) Definition of Luminance of White

Measure the luminance of White pattern / (Ref.: Active Area)

Display Luminance=(L1+L2+L3+L4+L5) / 5

H—Active Area Width, V—Active Area Height, L—Luminance

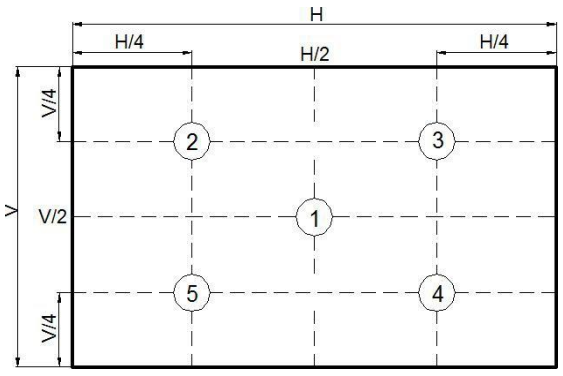


Figure 7 Measurement Locations of 5 Points

Note (7) Definition of Luminance Uniformity (Ref.: Active Area)

Measure the luminance of White pattern at 5 points.

Luminance Uniformity= Min.(L1, L2, ... L5) / Max.(L1, L2, ... L5)

Measure the luminance of White pattern at 13 points.

Luminance Uniformity= Min.(L1, L2, ... L13) / Max.(L1, L2, ... L13)

H—Active Area Width, V—Active Area Height, L—Luminance

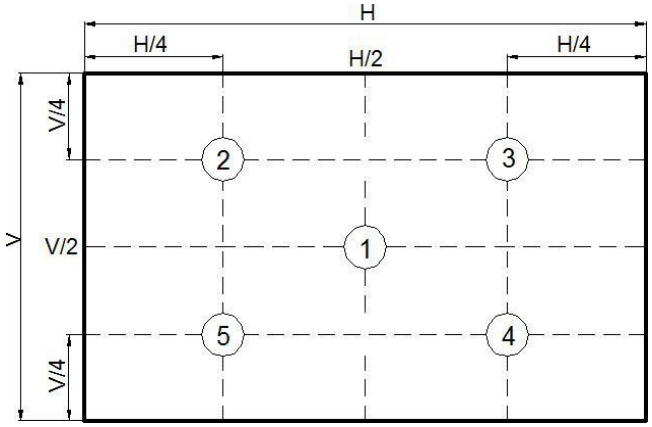


Figure 8 Measurement Locations of 5Points

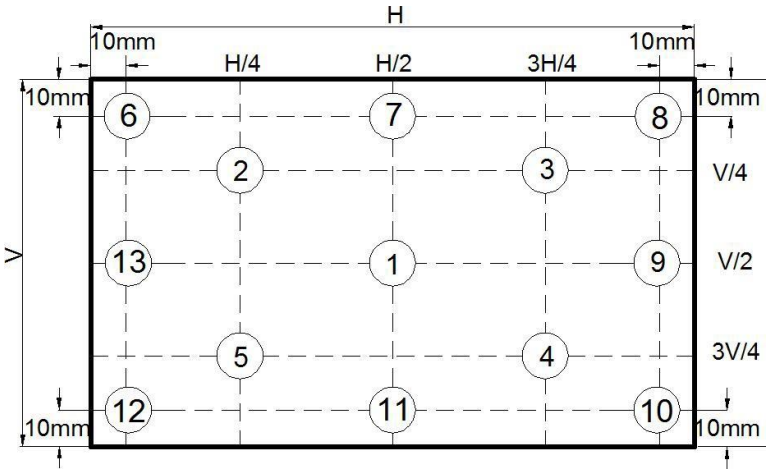


Figure 9 Measurement Locations of 13 Points

Note (8) All optical data are based on *** given system & nominal parameter & testing machine in this document.

4.0 Electrical Characteristics

4.1 Interface Connector

Table 3 Signal Connector Type

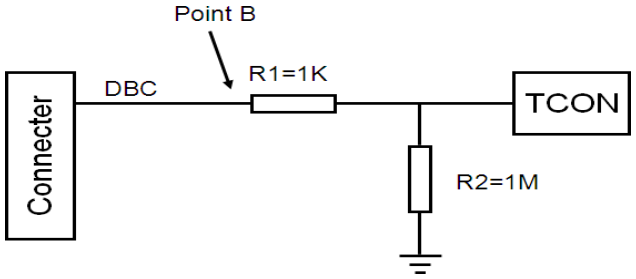
Item	Description
Manufacturer / Type	IPEX 20455-030E-66

Table 4 Signal Connector Pin Assignment

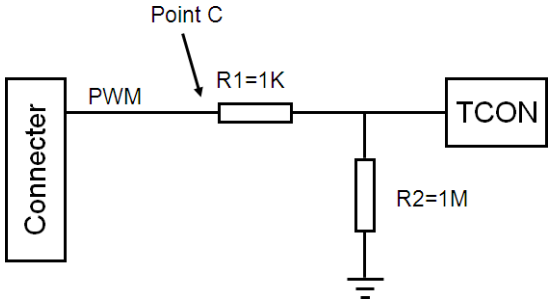
Pin No.	Symbol	Description	Remarks
1	DBC_EN	Reserved for DBC control, enable DBC from +2.5V to +3.3V, and disable on Grounding.	(Note1)
2	H_GND	High Speed Ground	-
3	Lane1_N	Complement Signal Link Lane 1	-
4	Lane1_P	True Signal Link Lane 1	-
5	H_GND	High Speed Ground	-
6	Lane0_N	Complement Signal Link Lane 0	-
7	Lane0_P	True Signal Link Lane 0	-
8	H_GND	High Speed Ground	-
9	AUX_CH_P	True Signal Auxiliary Channel	-
10	AUX_CH_N	Complement Signal Auxiliary Channel	-
11	H_GND	High Speed Ground	-
12	LCD_VCC	LCD logic and driver power	-
13	LCD_VCC	LCD logic and driver power	-
14	NC	Reverse for supplier only	-
15	GND	LCD logic and driver ground	-
16	GND	LCD logic and driver ground	-
17	HPD	HPD signal pin	-
18	BL_GND	LED Backlight ground	-
19	BL_GND	LED Backlight ground	-
20	BL_GND	LED Backlight ground	-
21	BL_GND	LED Backlight ground	-
22	BL_ENABLE	LED Backlight Control on/off control	-
23	BL_PWM	System PWM signal Input	(Note2)
24	NC	Reverse for supplier only	-
25	NC	Reverse for supplier only	-
26	BL_PWR	LED Backlight power	-
27	BL_PWR	LED Backlight power	

28	**BL_PWR**	**LED Backlight power**	
29	**BL_PWR**	**LED Backlight power**	
30	**NC**	**No Connect**	-

Note (1) For DBC pin: We designed the pull-down resistor structure as shown below,If you want to enable DBC mode, please ensure that the voltage of DBC pin is 2.5V~3.3V on Point B.



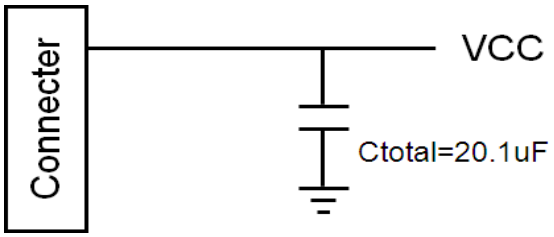
Note (2) For PWM pin: If you want to enable PWM mode, please ensure that the voltage of PWM pin is 2.5V~3.3V on Point C.



Note (3) The VCC net Capacity sketch map.

PCBA VCC net total Capacitor in theory.

R=0Ω



4.2 Signal Electrical Characteristics

Table 5 Display Port Main Link

Parameter	Description	Min.	Typ.	Max.	Unit
V_{CM}	Differentia Common Mode Voltage	-	0	-	V
$V_{Diff\ P-P}$ Level 1	Differential Peak to Peak Voltage Level 1	0.1	-	1.32	V

Note: (1) Input signals shall be low or Hi- resistance state when VDD is off.

(2) It is recommended to refer the specifications of VESA Display Port Standard.

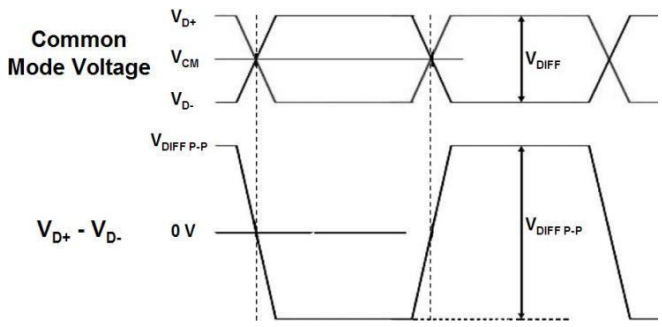


Figure 10 Display Port Main Link Signal

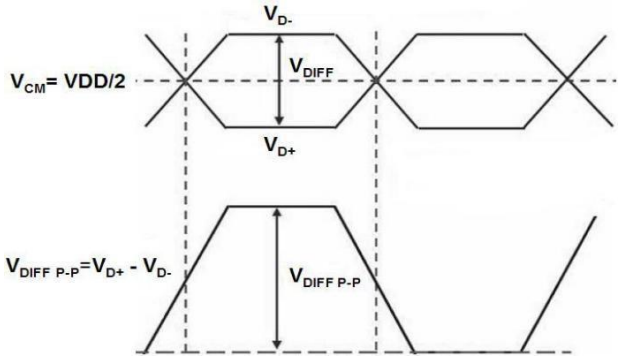


Figure11 Display Port AUX_CH Signal

Table 6 Display Port AUX_CH

Parameter	Description	Min.	Typ.	Max.	Unit
$V_{AUX-Diff\ P-P}$	AUX Differential Peak to Peak Voltage	0.18	0.20	0.80	V
$V_{AUX-DC-CM\_RX}$	AUX Common Mode Voltage when receiving	-	0	-	V
V_{CM_RX}	AUX Common Mode Voltage when transmitting	-	0.3	-	V

Note: $V_{AUX-Diff\ P-P}$ follow as DP803 Datasheet standard.

Table 7 Display Port V_{HPD}

Parameter	Description	Min.	Typ.	Max.	Unit
V_{HPD}	HPD Voltage	2.5	-	3.3	V

Note: Follow as DP803 Datasheet standard .

4.3 Interface Timings

Table 8 Interface Timings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Clock Frequency	Fclk	111.0	138.8	150.3	MHz
H Total Time	HT	2,040	2,080	2,120	Clocks
H Active Time	HA		1,920		Clocks
V Total Time	VT	1,104	1,112	1,120	Lines
V Active Time	VA		1,080		Lines
Frame Rate	FV	48	60	65	Hz

Note (1) Fclk=HT(typ.)* VT(typ.)* FV≤150.3MHz

Note (2) All reliabilities are specified for timing specification based on refresh rate of 60Hz. TCXD156MBLON-68 is secured only for function under lower refresh rate; 60Hz at Normal mode, 48Hz at Power save mode. Don’t care flicker level（power save mode）

4.4 Input Power Specifications

Input power specifications are as follows.

Table 9 Input Power Specifications

Parameter		Symbol	Min.	Typ.	Max.	Unit	Note
System Power Supply							
LCD Drive Voltage (Logic)		V_{DD}	3	3.3	3.6	V	(1),(2),(3)
VDD Current	Mosaic Pattern	I_{DD}	-	0.20	-	A	(1),(4)
VDD Power Consumption	Mosaic Pattern	P_{DD}	-	0.66	-	W	
Rush Current		I_{Rush}	-	-	1.5	A	(1),(5)
Allowable Logic/LCD Drive Ripple Voltage		V_{VDD-RP}	-	-	200	mV	(1)
LED Power Supply							
LED Input Voltage		V_{LED}	-	12	-	V	(1),(2)
LED Power Consumption		P_{LED}	-	-	3.8	W	(1),(6)
LED Forward Voltage		V_F	-	-	3.0	V	(1),(2)
LED Forward Current		I_F	-	20	-	mA	
PWM Signal Voltage	High	V_{PWM}	1.2	3.3	3.6	V	
	Low		-	0	0.4		
LED Enable Voltage	High	V_{LED_EN}	1.2	3.3	3.6	V	
	Low		-	0	0.4		
Input PWM Frequency		F_{PWM}	100	200	1000	Hz	(1),(2),(7)
Duty Ratio		PWM	1	-	100	%	(1),(8)
LED Life Time		LT	15,000	25,000	-	Hours	(1),(9)

Note (1) All of the specifications are guaranteed under normal conditions. Normal conditions are defined as follow: Temperature: 25℃, Humidity: 55± 10%RH.

Note (2) All of the absolute maximum ratings specified in the table, if exceeded, may cause faulty operation or unrecoverable damage. It is recommended to follow the typical value.

= 60 Hz condition and Mosaic Patterns& Worse pattern.

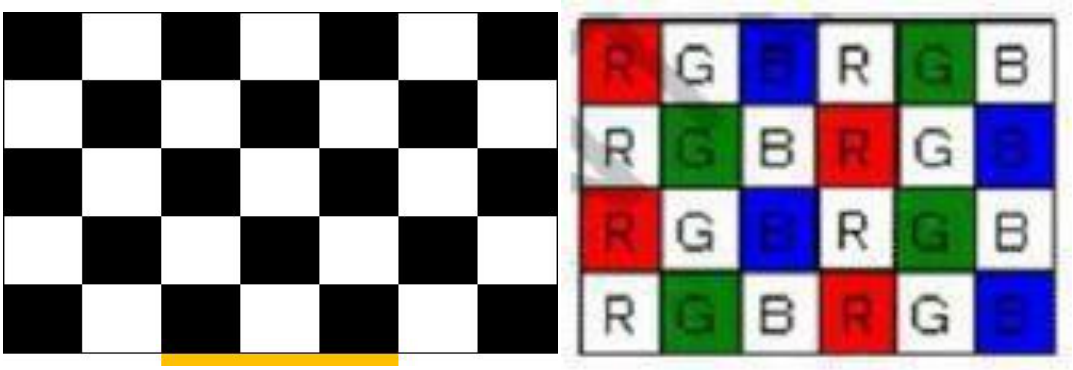


Figure 12 Mosaic Pattern& Worse pattern

Note (4) The figures below is the measuring condition of V_{DD}. Rush current can be measured when T_{RUSH} is 0.5 ms.

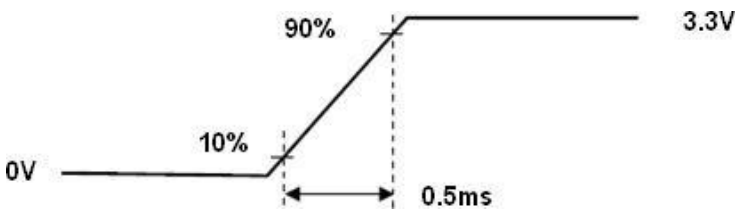


Figure 13 V_{DD} Rising Time

Note (5) The power consumption of LED Driver are under the V_{LED} = 12.0V, Dimming of Max luminance.

Note (6) Although acceptable range as defined, the dimming ratio is not effective at all conditions. The PWM frequency should be fixed and stable for more consistent luminance control at any specific level desired.

Note (7) The operation of LED Driver below minimum dimming ratio may cause flickering or reliability issue.

Note (8) The life time is determined as the sum of the lighting time till the luminance of LCD at the typical LED current reducing to 50% of the minimum value under normal operating condition.

4.5 Power ON/OFF Sequence

1. Interface signals are also shown in the chart. Signals from any system shall be Hi-resistance state or low level when VDD voltage is off.
2. When system first start up, should keep the VDD high time longer than 200ms, otherwise may cause image sticking when VDD drop off.

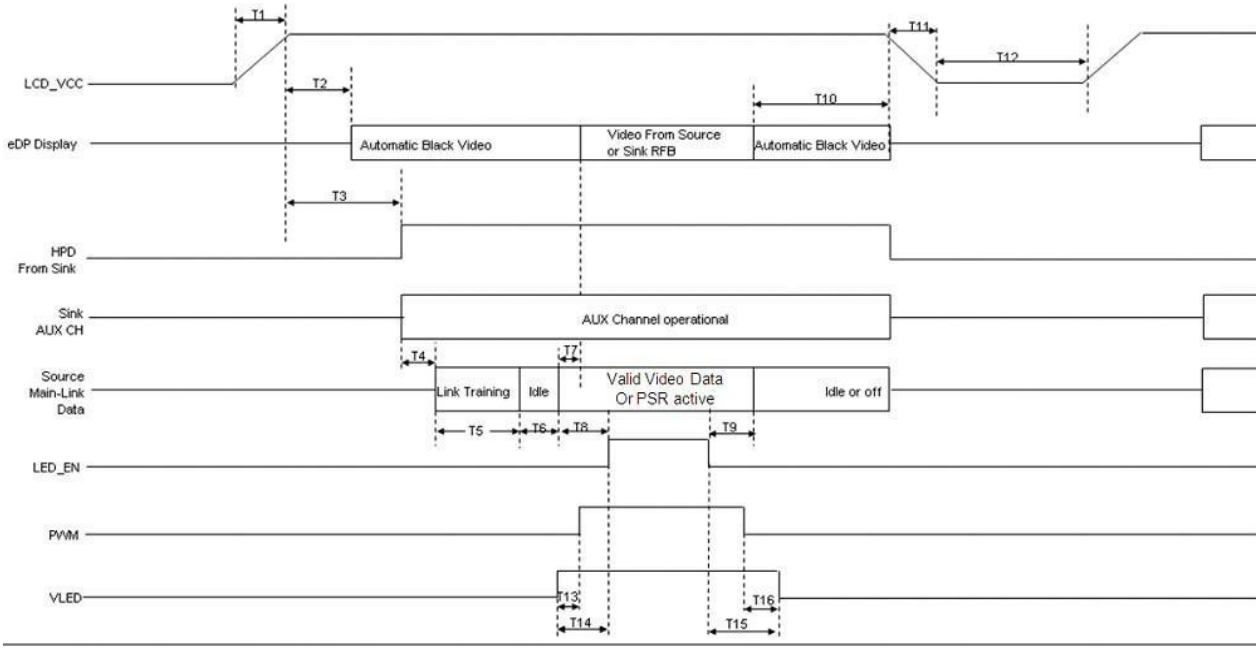


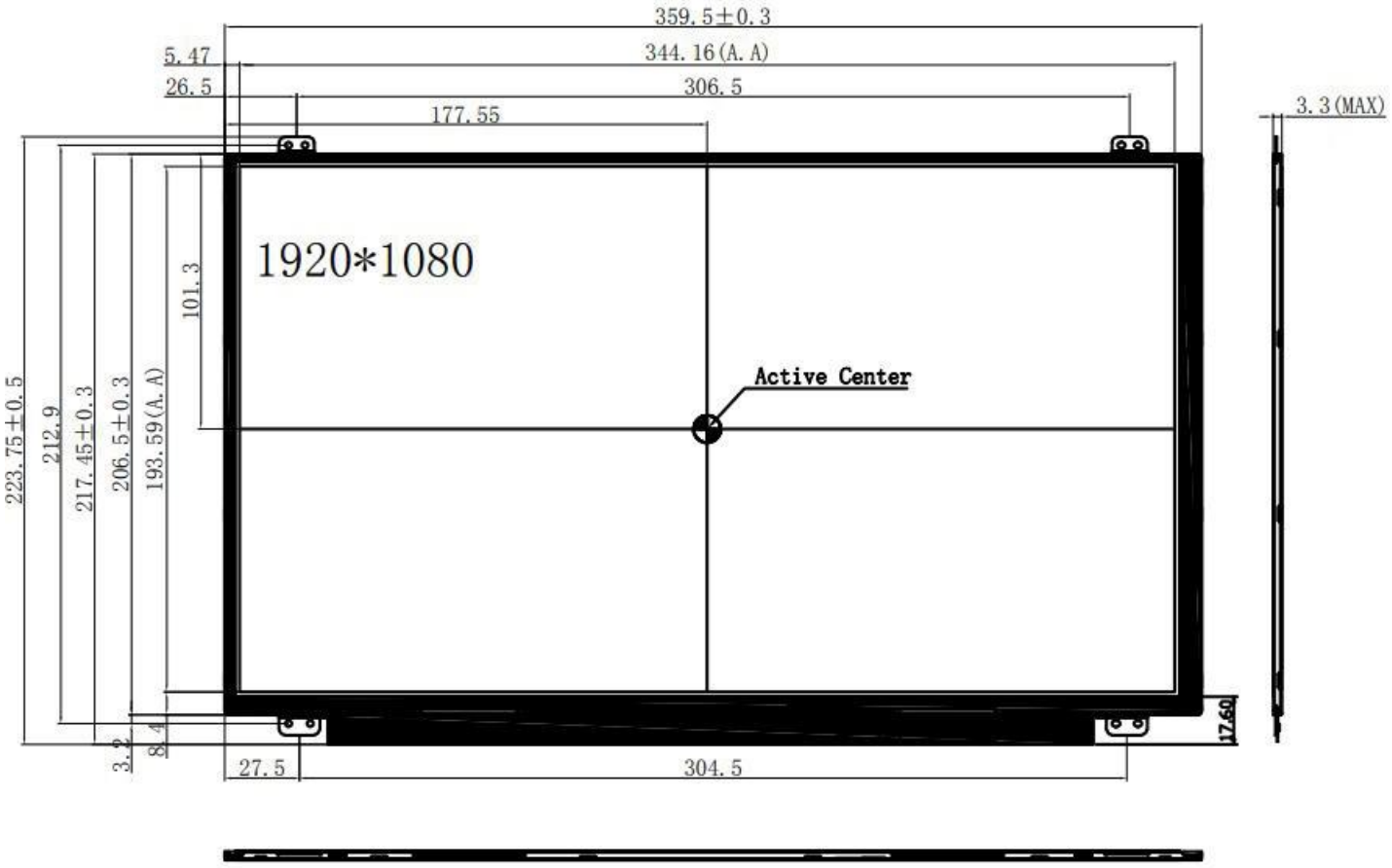
Figure 14 Power Sequence

Table 10 Power Sequencing Requirements

Parameter	Symbol	Min.	Typ.	Max.	Unit
VDD Rise Time (10% to 90%)	T1	0.5	-	10	ms
Delay from VDD to automatic Black Video generation	T2	0	-	200	ms
Delay from VDD to HPD high	T3	0	-	200	ms
Delay from HPD high to link training initialization	T4	-	-	-	ms
Link training duration	T5	-	-	-	ms
Link idle	T6	-	-	-	ms
Delay from valid video data from Source to video on display	T7	0	-	50	ms
Delay from valid video data from Source to backlight enable	T8	80	-	-	ms
Delay from backlight disable to end of valid video date	T9	-	-	-	ms
Delay from end of valid video data from Source to VDD off	T10	0	-	500	ms
VDD fall time (90% to 10%)	T11	0.5	-	10	ms
VDD off time	T12	500	-	-	ms
Delay from VLED to PWM	T13	0	-	-	ms
Delay from VLED to backlight enable	T14	0	-	-	ms
Delay from backlight disable to VLED off	T15	0	-	-	ms
Delay from PWM off to VLED off	T16	0	-	-	ms

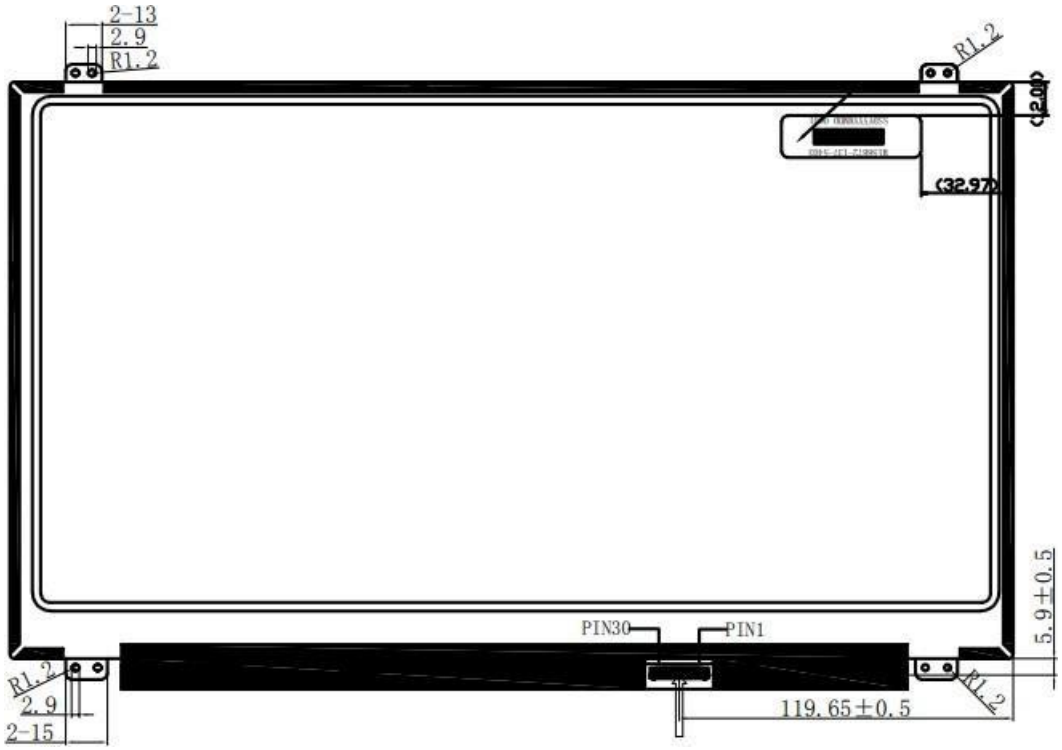
5.0 Mechanical Characteristics

5.1 Outline Drawing



Unit: mm

Figure 15 Reference Outline Drawing (Front Side)



Unit: mm

Figure 16 Reference Outline Drawing (Back Side)

5.2 Dimension Specifications

Table 11 Module Dimension Specifications

Item		Min.	Typ.	Max.	Unit
Width		359.20	359.50	359.80	mm
Height	W/O PCB	206.20	206.50	205.80	mm
	W/ PCB	223.45	223.75	224.05	mm
Thickness		-	-	3.3	mm
Weight		-	-	380	g

Note(1) Pol should be higher than the display surface and all components. Mylar can not be attached higher than Pol.

Note(2) LCM warpage spec:≤0.5mm, measured by feeler.

Note(3) Measure instrument: 1 、2 measured by Vernier Caliper, 4 and 5 measured by micrometer, others measured by 3D.

Note(4) Max. thickness is defined by customer.

6.0 Reliability Conditions

Table 12 Reliability Condition

Item		Package	Test Conditions		Note
High Temperature/High Humidity Operating Test		Module	T_{gs}=50℃, 80%RH, 300 hours		(1),(2),(3),(4)
High Temperature/High Humidity Storage Test		Module	T_a=60℃, 90%RH, 300 hours		(1),(3),(4)
Low Temperature Operating Test		Module	T_a=0℃, 300 hours		(1),(2),(3),(4)
Low Temperature Storage Test		Module	T_a= -20℃, 300 hours		(1),(3),(4)
Shock Non-operating Test		Module	210G, 3ms half-sine ±x ±y ±z each aixs/1times 50G, 18ms, Trapezoidal ±x ±y ±z each aixs/1times		(1),(3),(5)
Vibration Non-operating Test		Module	1.5G , 10~200 Hz , x、y、z each axis/30min.		
ESD Test	Operating	Module	Contact	± 8 KV, 150pF(330Ohm)	(1),(2),(6)
			Air	± 15KV, 150pF(330Ohm)	
Image Sticking		Module	25℃,chessboard 7*5; change to 50% gray pattern. Check point: 3h, release 20min, ND Filter 5% invisible.		(1),(2),(7),(8)

Note (1) A sample can only have one test. Outward appearance, image quality and optical data can only be checked at normal conditions according to the *** document before reliable test. Only check the function of the module after reliability test.

Note (2) The setting of electrical parameters should follow the typical value before reliability test.

Note (3) During the test, it is unaccepted to have condensate water remains. Besides, protect the module from static electricity.

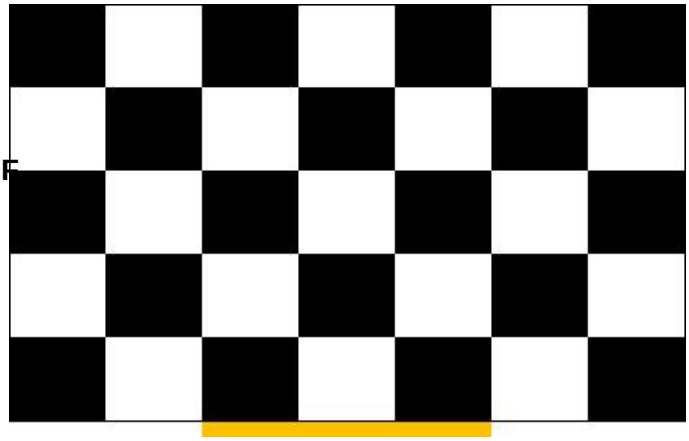
Note (4) The sample must be released for 24 hours under normal conditions before judging. Furthermore, all the judgment must be made under normal conditions. Normal conditions are defined as follow: Temperature: 25℃, Humidity: 55± 10%RH. T_a= Ambient Temperature, T_{gs}= Glass Surface Temperature.

Note (5) The module should be fixed firmly in order to avoid twisting and bending.

Note (6) It could be regarded as pass, when the module recovers from function fault caused by ESD after resetting.

Note (7) It is recommended to follow the nominal parameter specified by *** before the Image Sticking test. Besides, V_{com} must be adjusted to optimize display quality.
Note (8)Suggested that LCD screen a single still picture running 12 hours or 24 hours, power bootable again in about 10 minutes.Or insert screen saver interface, single LCD screen run 30 to 60 minutes automatically run the screensaver

F



7.0 General Precaution

7.1 Using Restriction

This product is not authorized for using in life supporting systems, aircraft navigation control systems, military systems and any other appliance where performance failure could be life-threatening or lead to be catastrophic.

7.2 Operation Precaution

(1) The LCD product should be operated under normal conditions.
Normal conditions are defined as below:

Temperature: 25℃
Humidity: 55±10%
Display pattern: continually changing pattern (Not stationary)

(2) Brightness and response time depend on the temperature. (It needs more time to reach normal brightness in low temperature.)

(3) It is necessary for you to pay attention to condensation when the ambient temperature drops suddenly. Condensate water would damage the polarizer and electrical contacted parts of the module. Besides, smear or spot will remain after condensate water evaporating.

(4) If the absolute maximum rating value was exceeded, it may damage the module.

(5) Do not adjust the variable resistor located on the module.

(6) Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding may be important to minimize the interference.

(7) Image sticking may occur when the module displayed the same pattern for long time.

(8) Do not connect or disconnect the module in the “power on” condition. Power supply should always be turned on/off by the “power on/off sequence”

(9) Ultra-violet ray filter is necessary for outdoor operation.

7.3 Mounting Precaution

(1) All the operators should be electrically grounded and with Ion-blown equipment turning on when mounting or handling. Dressing finger-stalls out of the gloves is important for keeping the panel clean during the incoming inspection and the process of assembly.

(2) It is unacceptable that the material of cover case contains acetic or chloric. Besides, any other material that could generate corrosive gas or cause circuit break by electro-chemical reaction is not desirable.

(3) The case on which a module is mounted should have sufficient strength so that external force is not transmitted to the module directly.

(4) It is obvious that you should adopt radiation structure to satisfy the temperature specification.

(5) It should be attached to the system tightly by using all holes for mounting, when the module is assembled. Be careful not to apply uneven force to the module， especially to the PCB on the back.

(6) A transparent protective film needs to be attached to the surface of the module.

(7) Do not press or scratch the polarizer exposed with anything harder than HB pencil lead. In

addition, don’t touch the pin exposed with bare hands directly.

(8) Clean the polarizer gently with absorbent cotton or soft cloth when it is dirty.

(9) Wipe off saliva or water droplet as soon as possible. Otherwise, it may cause deformation and fading of color.

(10) Desirable cleaners are IPA (Isopropyl Alcohol) or hexane. Do not use Ketone type materials (ex. Acetone), Ethyl alcohol, Toluene, Ethyl acid or Methyl chloride. It might permanent damage to the polarizer due to chemical reaction.

(11) Do not disassemble or modify the module. It may damage sensitive parts in the LCD module, and cause scratches or dust remains. *** does not warrant the module, if you disassemble or modify the module.

7.4 Handling Precaution

(1) Static electricity will generate between the film and polarizer, when the protection film is peeled off. It should be peeled off slowly and carefully by operators who are electrically grounded and with Ion-blown equipment turning on. Besides, it is recommended to peel off the film from the bonding area.

(2) The protection film is attached to the polarizer with a small amount of glue. When the module with protection film attached is stored for a long time, a little glue may remain after peeling.

(3) If the liquid crystal material leaks from the panel, keep it away from the eyes and mouth. In case of contact with hands, legs or clothes, it must be clean with soap thoroughly.

7.5 Storage Precaution

When storing modules as spares for long time, the following precautions must be executed.

(1) Store them in a dark place. Do not expose to sunlight or fluorescent light. Keep the temperature between 5℃ and 35℃ at normal humidity.

(2) The polarizer surface should not come in contact with any other object. It is recommended that they be stored in the container in which they were shipped.

(3) It is recommended to use it in a short-time period, after it's unpacked. Otherwise, we would not guarantee the quality.

7.6 Others

When disposing LCD module, obey the local environmental regulations.

8.0 EDID Data Structure

	Byte (hex)	Field Name and Comments	Value (hex)	Value (binary)
Header	0	Header	00	00000000
	1	Header	FF	11111111
	2	Header	FF	11111111
	3	Header	FF	11111111
	4	Header	FF	11111111
	5	Header	FF	11111111
	6	Header	FF	11111111
	7	Header	00	00000000
Vendor / Product	8	EISA manufacture code = 3 Character ID	26	00100110
	9	EISA manufacture code (Compressed ASCII)	CF	11001111
	0A	Panel Supplier Reserved – Product Code	1F	00011111
	0B	Panel Supplier Reserved – Product Code	06	00000110
	0C	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	0D	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	0E	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	0F	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	10	Week of manufacture	00	00000000
	11	Year of manufacture	1D	00011101
	12	EDID structure version # = 1	01	00000001
	13	EDID revision # = 3	04	00000100
Display Parameters	14	Video I/P definition = Digital I/P (80h)	A5	10100101
	15	Max H image size = (Rounded to cm)	22	00100010
	16	Max V image size = (Rounded to cm)	13	00010011
	17	Display gamma = (gamma ×100)-100 = Example: (2.2 × 100) – 100 = 120	78	01111000
	18	Feature support (no DPMS, Active off, RGB, timing BLK 1)	0A	00001010

Panel Color Coordinates	19	Red/Green Low bit (RxRy/GxGy)	DE	11011110
	1A	Blue/White Low bit (BxBy/WxWy)	50	01010000
	1B	Red X Rx = 0.xxx	A3	10100011
	1C	Red Y Ry = 0.xxx	54	01010100
	1D	Green X Gx = 0.xxx	4C	01001100
	1E	Green Y Gy = 0.xxx	99	10011001
	1F	Blue X Bx = 0.xxx	26	00100110
	20	Blue Y By = 0.xxx	0F	00001111
	21	White X Wx = 0.xxx	50	01010000
	22	White Y Wy = 0.xxx	54	01010100
Established Timings	23	Established timings 1 (00h if not used)	00	00000000
	24	Established timings 2 (00h if not used)	00	00000000
	25	Manufacturer's timings (00h if not used)	00	00000000
Standard Timing ID	26	Standard timing ID1 (01h if not used)	01	00000001
	27	Standard timing ID1 (01h if not used)	01	00000001
	28	Standard timing ID2 (01h if not used)	01	00000001
	29	Standard timing ID2 (01h if not used)	01	00000001
	2A	Standard timing ID3 (01h if not used)	01	00000001
	2B	Standard timing ID3 (01h if not used)	01	00000001
	2C	Standard timing ID4 (01h if not used)	01	00000001
	2D	Standard timing ID4 (01h if not used)	01	00000001
	2E	Standard timing ID5 (01h if not used)	01	00000001
	2F	Standard timing ID5 (01h if not used)	01	00000001
	30	Standard timing ID6 (01h if not used)	01	00000001
	31	Standard timing ID6 (01h if not used)	01	00000001
	32	Standard timing ID7 (01h if not used)	01	00000001
	33	Standard timing ID7 (01h if not used)	01	00000001
	34	Standard timing ID8 (01h if not used)	01	00000001
	35	Standard timing ID8 (01h if not used)	01	00000001
Timing Descripter #1	36	Pixel Clock/10,000 (LSB)	38	00111000
	37	Pixel Clock/10,000 (MSB)	36	00110110

	38	Horizontal Active = xxxx pixels (lower 8 bits)	80	10000000
	39	Horizontal Blanking (Thbp) = xxxx pixels (lower 8 bits)	A0	10100000
	3A	Horizontal Active/Horizontal blanking (Thbp) (upper4:4 bits)	70	01110000
	3B	Vertical Active = xxxx lines	38	00111000
	3C	Vertical Blanking (Tvbp) = xxxx lines (DE Blanking typ. for DE only panels)	20	00100000
	3D	Vertical Active : Vertical Blanking (Tvbp) (upper4:4 bits)	40	01000000
	3E	Horizontal Sync, Offset (Thfp) = xxxx pixels	18	00011000
	3F	Horizontal Sync, Pulse Width = xxxx pixels	30	00110000
	40	Vertical Sync, Offset (Tvfp) = xx lines Sync Width = xx lines	3C	00111100
	41	Horizontal Vertical Sync Offset/Width upper 2 bits	00	00000000
	42	Horizontal Image Size =xxx mm	58	01011000
	43	Vertical image Size = xxx mm	C2	11000010
	44	Horizontal Image Size / Vertical image size	10	00010000
	45	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000
	46	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000
	47	Non-interlaced, Normal, no stereo, Separate sync, H/V pol Negatives, **DE only note: LSB is set to "1" if panel is DE-timing only. H/V can be ignored.**	19	00011001
Timing Descripter #2	48	Pixel Clock/10,000 (LSB)	5C	01011100
	49	Pixel Clock/10,000 (MSB)	2B	00101011
	4A	Horizontal Active = xxxx pixels (lower 8 bits)	80	10000000
	4B	Horizontal Blanking (Thbp) = xxxx pixels (lower 8 bits)	A0	10100000
	4C	Horizontal Active/Horizontal blanking (Thbp) (upper4:4 bits)	70	01110000
	4D	Vertical Active = xxxx lines	38	00111000

	4E	Vertical Blanking (Tvbp) = xxxx lines (DE Blanking typ. for DE only panels)	20	00100000
	4F	Vertical Active : Vertical Blanking (Tvbp) (upper4:4 bits)	40	01000000
	50	Horizontal Sync, Offset (Thfp) = xxxx pixels	18	00011000
	51	Horizontal Sync, Pulse Width = xxxx pixels	30	00110000
	52	Vertical Sync, Offset (Tvfp) = xx lines Sync Width = xx lines	3C	00111100
	53	Horizontal Vertical Sync Offset/Width upper 2 bits	00	00000000
	54	Horizontal Image Size =xxx mm	58	01011000
	55	Vertical image Size = xxx mm	C2	11000010
	56	Horizontal Image Size / Vertical image size	10	00010000
	57	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000
	58	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000
	59	Non-interlaced, Normal, no stereo, Separate sync, H/V pol Negatives, **DE only note: LSB is set to "1" if panel is DE-timing only. H/V can be ignored.**	19	00011001
Timing Descripter #3 Dell specific information	5A	Flag	00	00000000
	5B	Flag	00	00000000
	5C	Flag	00	00000000
	5D	Dummy Descriptor	FE	11111110
	5E	Flag	00	00000000
	5F	Dell P/N 1st Character	50	01010000
	60	Dell P/N 2nd Character	57	01010111
	61	Dell P/N 3rd Character	58	01011000
	62	Dell P/N 4th Character	31	00110001
	63	Dell P/N 5th Character	38	00111000
	64	LCD Supplier EEDID Revision #	80	10000000
	65	Manufacturer P/N	31	00110001
	66	Manufacturer P/N	35	00110101
	67	Manufacturer P/N	36	00110110
	68	Manufacturer P/N	4E	01001110
	69	Manufacturer P/N	57	01010111
	6A	Manufacturer P/N	46	01000110

	6B	Manufacturer P/N (If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	37	00110111
Timing Descripter #4	6C	Flag	00	00000000
	6D	Flag	00	00000000
	6E	Flag	00	00000000
	6F	Data Type Tag:	00	00000000
	70	Flag	00	00000000
	71	SMBUS Value = XX nits	02	00000010
	72	SMBUS Value = XX nits	41	01000001
	73	SMBUS Value = XX nits	31	00110001
	74	SMBUS Value = XX nits	1E	00011110
	75	SMBUS Value = XX nits	00	00000000
	76	SMBUS Value = XXX nits	10	00010000
	77	SMBUS Value = XXX nits	00	00000000
	78	SMBUS Value = max nits (Typically = 00h, XXX nits)	00	00000000
	79	Number of LVDS receiver chips = '01' or '02'	0A	00001010
	7A	BIST Enable: Yes = '01' No = '00'	01	00000001
	7B	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	0A	00001010
	7C	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	20	00100000
	7D	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	20	00100000
Checksum	7E	Extension flag (# of optional 128 EDID extension blocks to follow, Typ = 0)	00	00000000
	7F	Checksum (The 1-byte sum of all 128 bytes in this EDID block shall = 0)	0D	00001101