SPECIFICATION
FOR
APPROVAL

(◆) Preliminary Specification
( ) Final Specification

Title	7.85” QXGA TFT LCD

BUYER	General
MODEL	

SUPPLIER	LG Display Co., Ltd.
*MODEL	LP079QX1
SUFFIX	SP0V

*When you obtain standard approval,
please use the above model name without suffix

APPROVED BY		SIGNATURE DATE
/		
/		
/		

Please return 1 copy for your confirmation with your signature and comments.

APPROVED BY		SIGNATURE DATE
J.K. Kim / S. Manager		
REVIEWED BY		
J.Y. Park / Manager		
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Products Engineering Dept.
LG. Display Co., Ltd

Contents

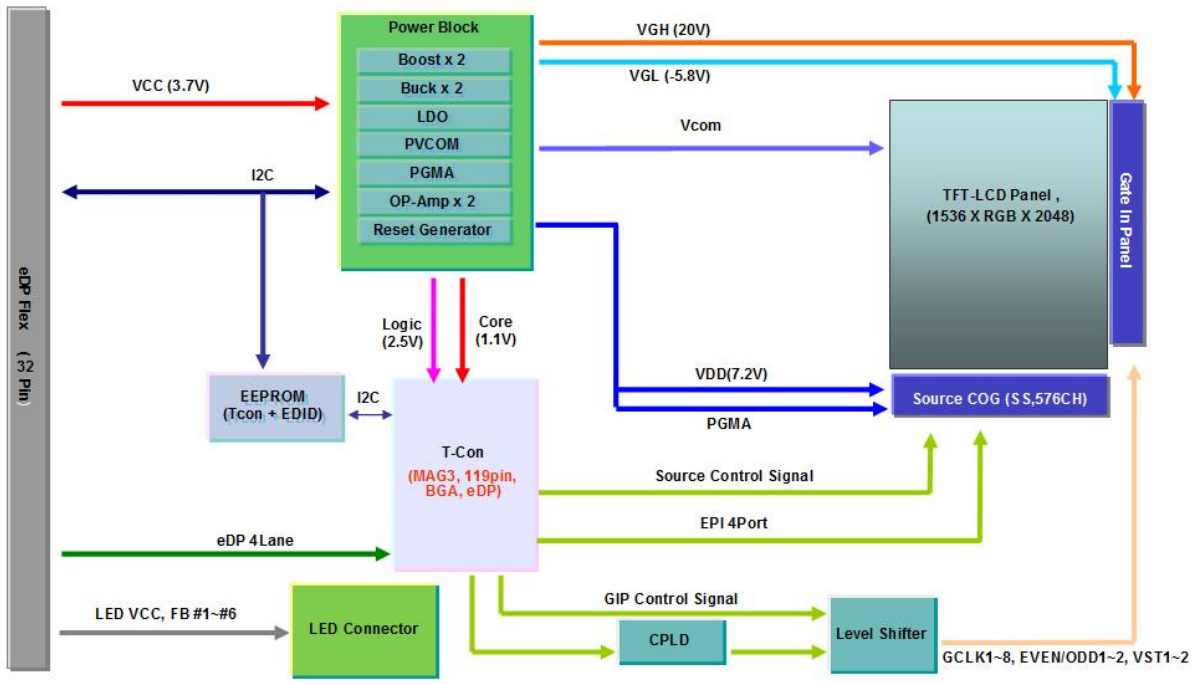
Record of revisions

Revision No	Revision Date	Page	Description	EDID ver
0.1	23. Jan. 2014	-	First Draft	-

1. General description

LP079QX1 is a Color Active Matrix Liquid Crystal Display with an integral Light Emitting Diode (LED) backlight system. The matrix employs a-Si Thin Film Transistor as the active element. It is a transmissive type display operating in the normally white mode. It has a 7.9 inch diagonally measured active display area with QXGA resolution (1536 horizontal by 2048 vertical pixel array). Each pixel is divided into Red, Green and Blue sub-pixels or dots which are arranged in vertical stripes. Gray scale or the brightness of the sub-pixel color is determined with a 8-bit gray scale signal for each dot, thus, presenting a palette of more than 16,7M colors. It has been designed to apply the interface method that enables low power, high speed, low EMI. FPD Link or compatible must be used as a DisplayPort chip. It is intended to support applications where thin thickness, wide viewing angle, low power are critical factors and graphic displays are important. In combination with the vertical arrangement of the sub-pixels, the LP079QX1's characteristics provide an excellent flat panel display for office automation products such as monitors.

FIG. 1 Block diagram



General features

Active Screen Size	7.9 inches diagonal
Outline Dimension	129.00(H)×171.05(V)×2.06(D, Max. W/O PCB) [mm]
Pixel Pitch	0.078(H)mm x 0.078(V)mm
Pixel Format	1536 hor. By 2048 Vertical Pixels RGB stripes arrangement
Color Depth	8-bit, 16,772,216 colors
Luminance, White	420 cd/m^2(Typ., @I_{LED}=21.3mA)
Power Consumption	Logic : 0.68W(typ.@white), Back Light : 2.84W (typ.@ I_{LED}= 21.3mA)
Weight	67.0 g (max.)
Display Operating Mode	Transmissive mode, normally Black
Surface Treatment	Glare, Anti-reflective treatment of the front polarizer, 3H

2. Absolute maximum ratings

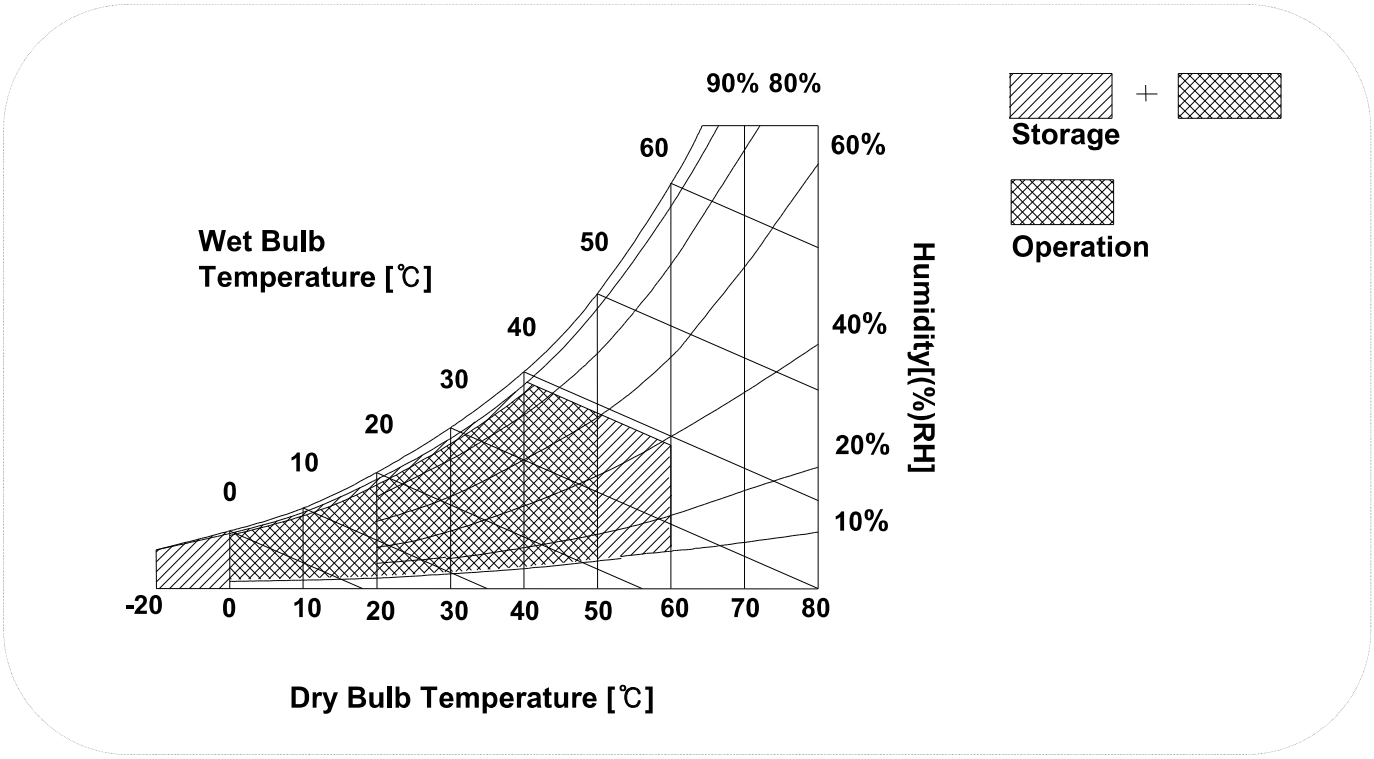
The following are maximum values which, if exceeded, may cause faulty operation or damage to the unit.

Table 1. Absolute maximum ratings

Parameter	Symbol	Values		Units	Notes
		Min	Max		
Power Supply Input Voltage	V_{LCD}	-0.3	+5.0	Vdc	at 25 ± 5°C
Operating Temperature	T_{OP}	0	50	°C	1
Storage Temperature	T_{ST}	-20	60	°C	
Operating Ambient Humidity	H_{OP}	10	90	%RH	
Storage Humidity	H_{ST}	10	90	%RH	

Note : 1. Temperature and relative humidity range are shown in the figure below.
Wet bulb temperature should be 39 °C Max, and no condensation of water.

FIG. 2 Temperature and relative humidity



3. Electrical specifications

3-1. Electrical characteristics

It requires two power inputs. One is employed to power the LCD electronics and to drive the TFT array and liquid crystal. The second input power for the LED Backlight, is typically generated by an LED Driver. The LED Driver is an external unit to the LCDs.

Table 2. Electrical characteristics

Parameter	Symbol	Values			Unit	Notes
		Min	Typ	Max		
MODULE :						
Power Supply Input Voltage	VCC	3.3	3.7	4.1	V_{DC}	
Power Supply Input Current	I_{CC} White	-	155	202	mA	1
Power Consumption	Pc (White)	-	0.68	0.8	Watt	1
Differential Impedance	Zm	80	90	100	Ohm	2
LED Backlight : (Without LED Driver)						
LED Driver input Volatge (on system)	VLED			12	V	3
Operating Current per string	I_{LED}		21.3		mA	4
Life Time		10,000	-	-	Hrs	6

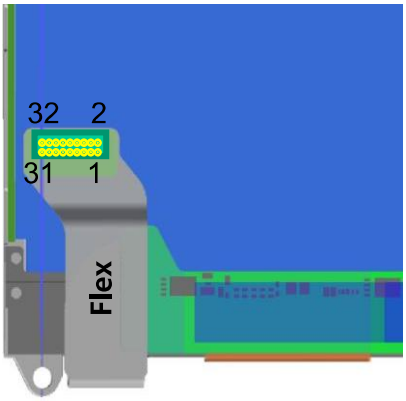
Note)

1. The specified current and power consumption are under the Vcc = 3.7V , 25℃, fv = 60Hz condition whereas White pattern is displayed and fv is the frame frequency.
2. This impedance value is needed to proper display and measured form LVDS Tx to the mating connector.
3. LED input voltage must be input below than 12V to operate normally for LED Driver.
4. The typical operating current is for the typical surface luminance (L_{WH}) in optical characteristics.
5. The LED power consumption shown above does not include power of external LED driver circuit for typical current condition.
6. The life time is determined as the time at which brightness of lamp is 50% compare to that of initial value at the typical lamp current.

3-2. Interface connections

Table 3. Module connector(CN1) pin configuration

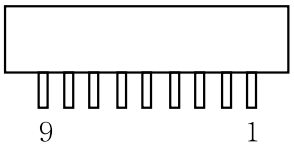
Pin#	Signal Description	Pin#	Signal Description
1	GND	2	LCM_OFF_L
3	EDP_DATA3_N	4	HPD
5	EDP_DATA3_P	6	PVCC_MAIN
7	GND	8	PVCC_MAIN
9	EDP_DATA2_N	10	PVCC_MAIN
11	EDP_DATA2_P	12	PVCC_MAIN
13	GND	14	PVCC_MAIN
15	EDP_DATA1_N	16	PVCC_MAIN
17	EDP_DATA1_P	18	GND
19	GND	20	WLED_STRING6
21	EDP_DATA0_N	22	WLED_STRING5
23	EDP_DATA0_P	24	WLED_STRING4
25	GND	26	WLED_STRING3
27	AUX_N	28	WLED_STRING2
29	AUX_P	30	WLED_STRING1
31	GND	32	PPWLED



3-3. BACKLIGHT CONNECTOR PIN CONFIGURATION(CN2)

The LED interface connector is a model TF13-9S-0.4H (9pin, 0.4pitch) manufactured by Hirose .
The pin configuration for the connector is shown in the table below.

Table 4. CNT2 (LED Backlight Connections)

Pin	Symbol	Description	Notes
1	FB6	LED Cathode (Negative)	
2	FB5	LED Cathode (Negative)	
3	FB4	LED Cathode (Negative)	
4	FB3	LED Cathode (Negative)	
5	FB2	LED Cathode (Negative)	
6	FB1	LED Cathode (Negative)	
7	NC	No Connection	
8	LED_VCC	LED Anode(Positive)	
9	LED_VCC	LED Anode(Positive)	

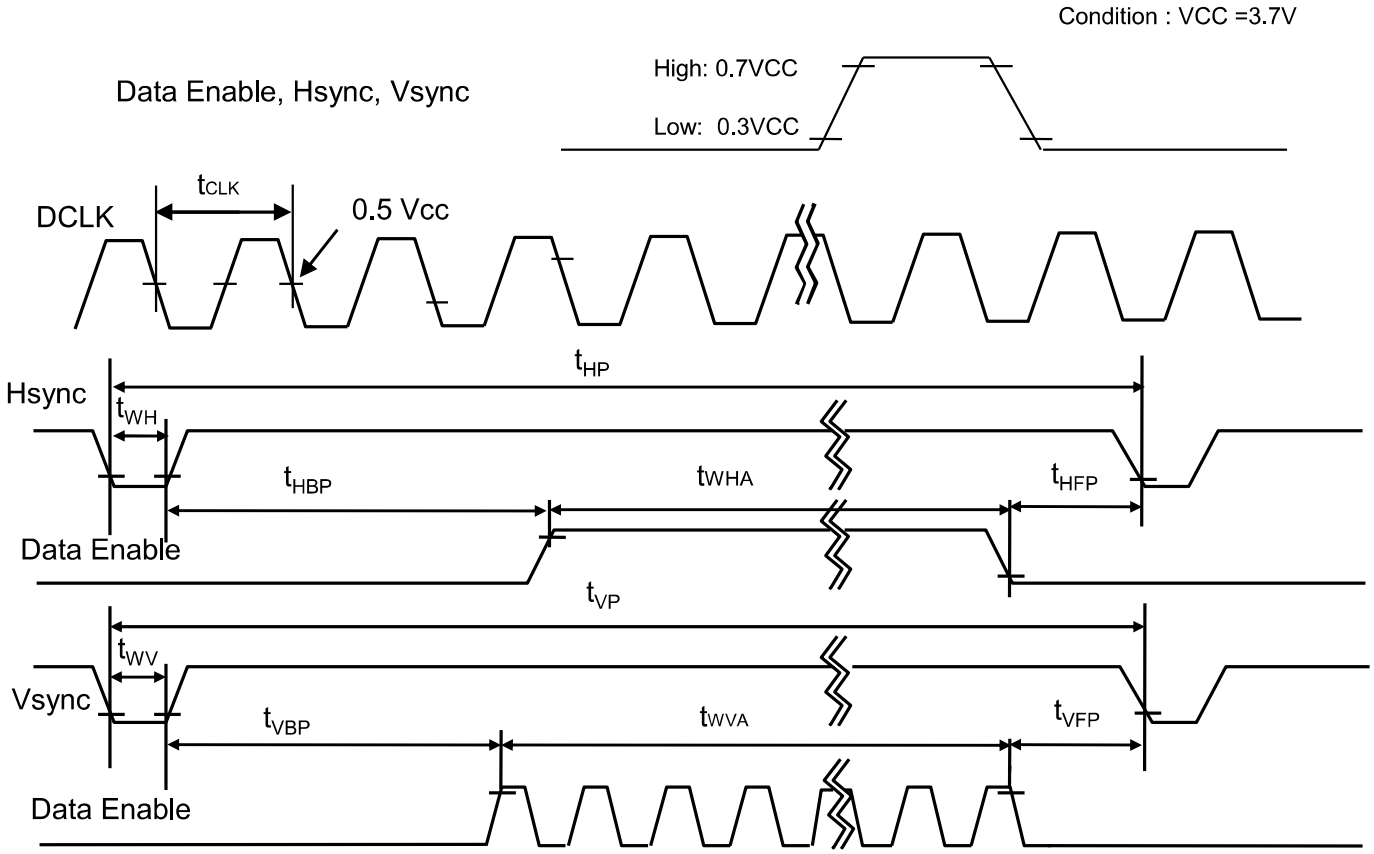
3-4. Signal timing specifications

This is the signal timing required at the input of the User connector. All of the interface signal timing should be satisfied with the following specifications for it's proper operation.

Table 5. TIMING TABLE

ITEM	Symbol		Min.	Typ.	Max.	Unit	Note
DCLK	Frequency	f_{CLK}	-	200.02	-	MHz	
Hsync	Active	t_{WHA}	-	1536	-	tCLK	
	Period	t_{HP}	-	1612	-		
	Width-Active	t_{WH}	-	16	-		
Vsync	Active	t_{WVA}	-	2048	-	tHP	
	Period	t_{VP}	-	2068	-		
	Width-Active	t_{WV}	-	4	-		
Data Enable	Horizontal back porch	t_{HBP}	-	48	-	tCLK	
	Horizontal front porch	t_{HFP}	-	12	-		
	Vertical back porch	t_{VBP}	-	8	-	tHP	
	Vertical front porch	t_{VFP}	-	8	-		

3-5. Signal timing waveforms



3-6. Power sequence

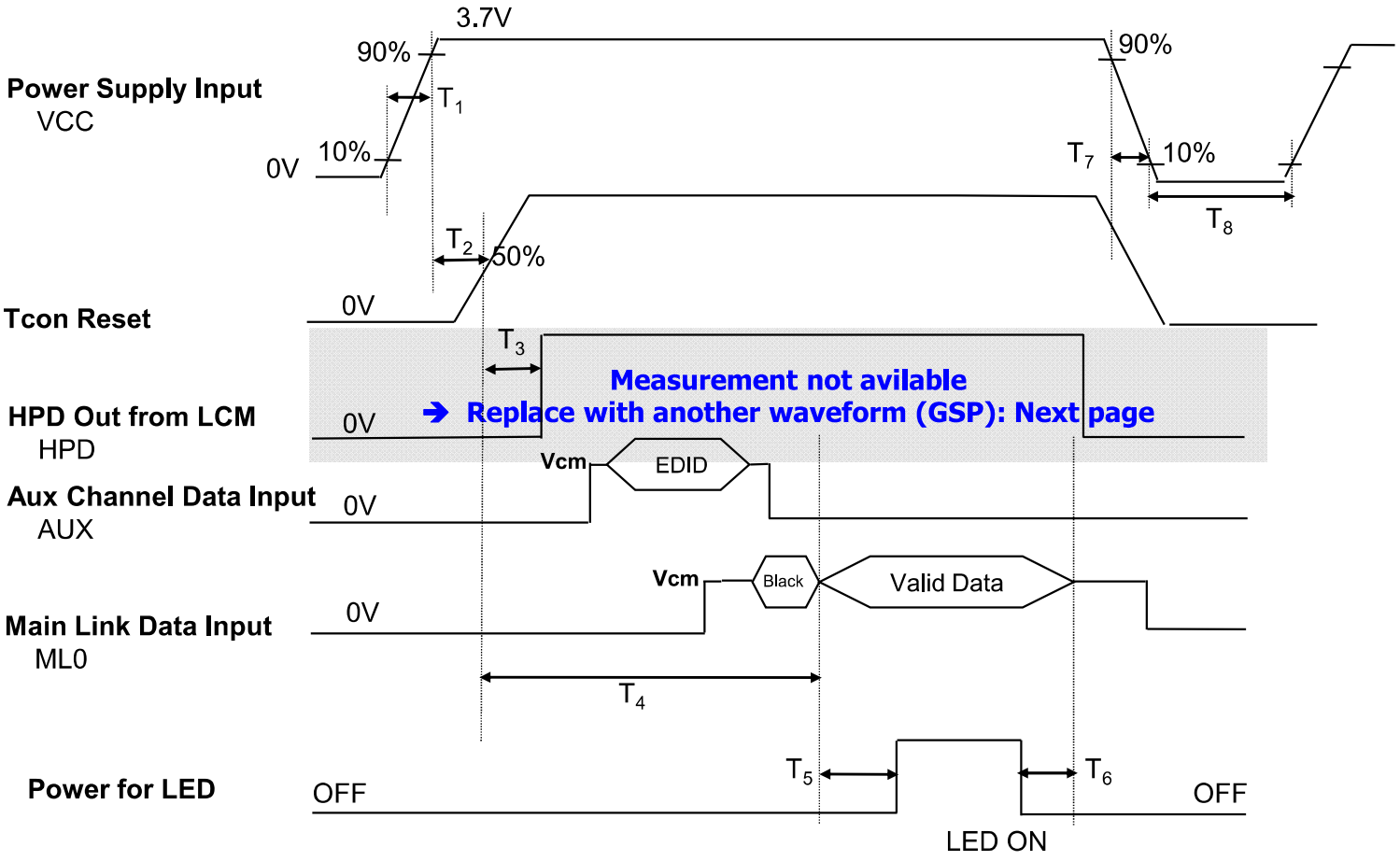
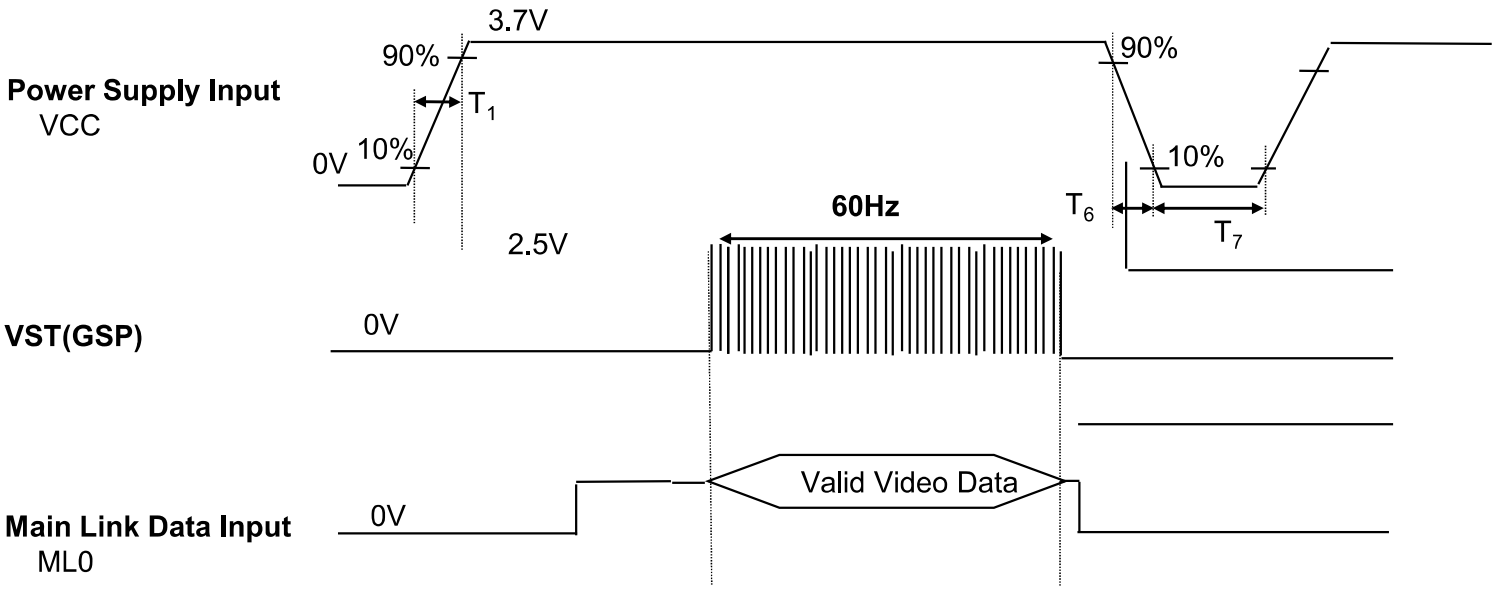


FIG. 4 Power sequence timing waveforms

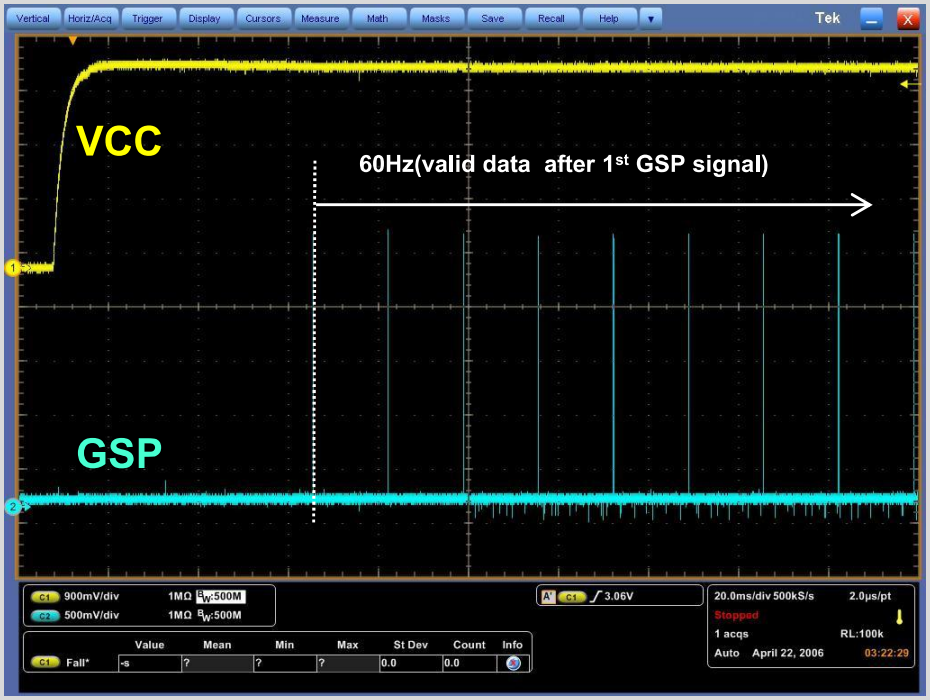
Table 6. TIMING TABLE

Measurement not available

Parameter	Value			Units
	Min.	Typ.	Max.	
T1	0.5	-	2	(ms)
T2	2	-	15	(ms)
T3	2	30	50	(ms)
T4	120	-	-	(ms)
T5	200	-	-	(ms)
T6	200	-	-	(ms)
T7	-	-	10	(ms)
T8	500	-	-	(ms)



※ Example of measurement (Replace Main Valid Data)



3-7. Color input data reference

The brightness of each primary color (red,green and blue) is based on the 8bit gray scale data input for the color ; the higher the binary input, the brighter the color. The table below provides a reference for color versus data input.

Table 6. Color data reference

Color		Input Color Data																							
		RED								GREEN								BLUE							
		MSB							LSB	MSB							LSB	MSB							LSB
		R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0
Basic Color	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red (255)	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Green (255)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Blue (255)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Cyan	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Magenta	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Yellow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RED	RED (000) Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED (001)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	...				...								...								...				
	RED (254)	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED (255)	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GREEN	GREEN (000) Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GREEN (001)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	...				...								...								...				
	GREEN (254)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	GREEN (255)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
BLUE	BLUE (000) Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	BLUE (001)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	...				...								...								...				
	BLUE (254)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0
	BLUE (255)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

4. Mechanical characteristics

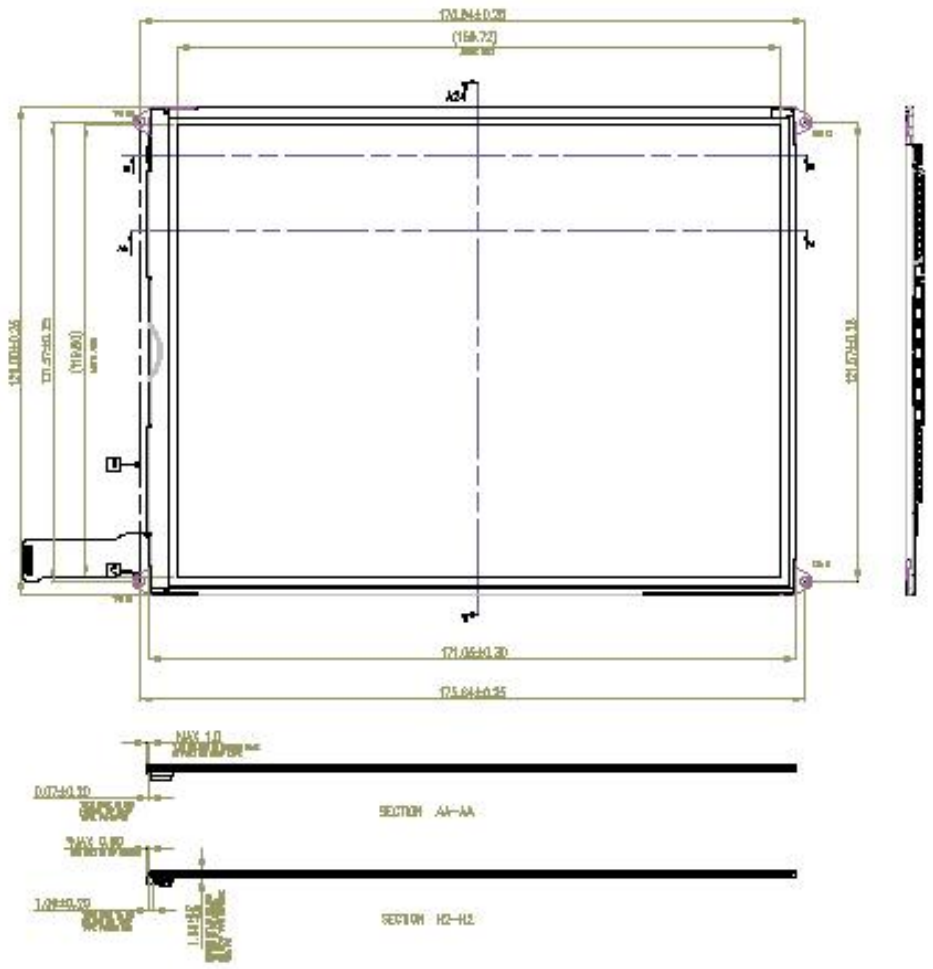
The contents provide general mechanical characteristics. In addition the figures in the next page are detailed mechanical drawing of the LCD.

Table 7. Mechanical characteristics

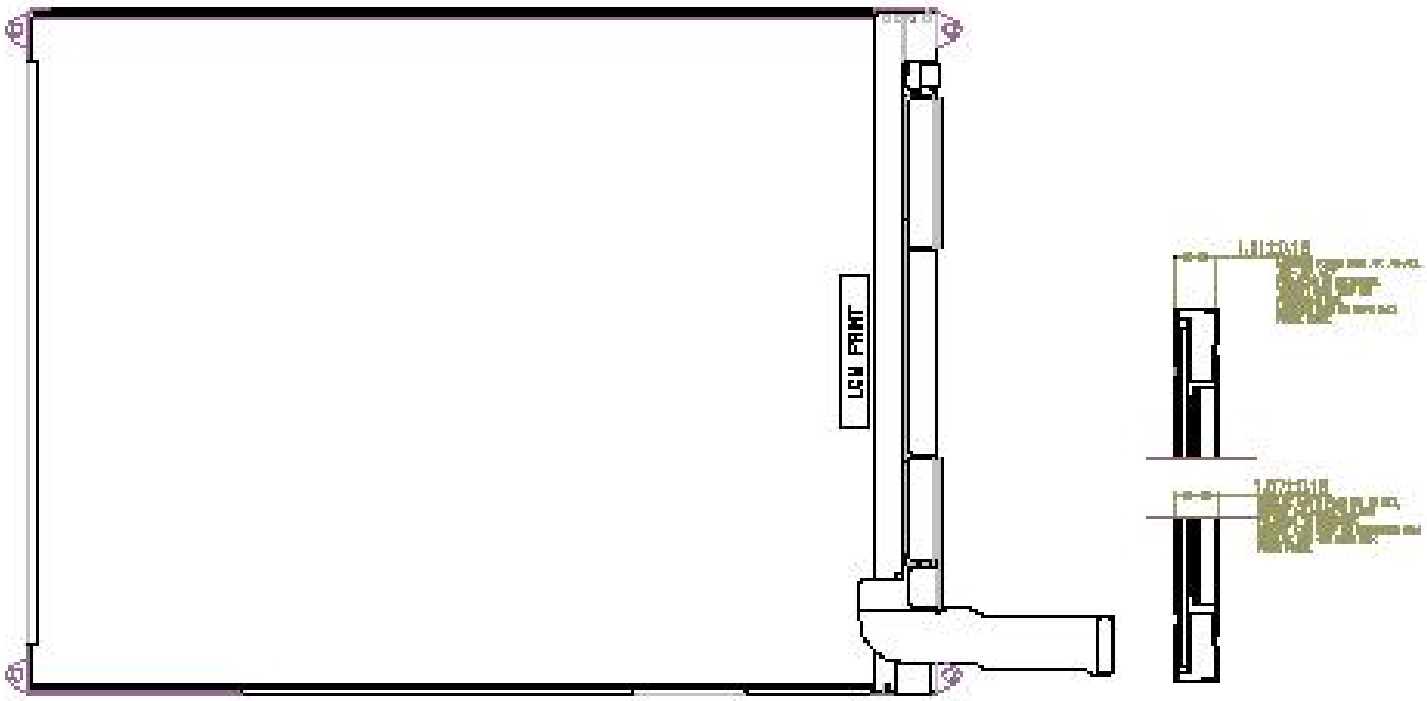
Parameter	Specification	Unit	Tolerance
Outline dimension	129.00(H)×171.05(V)	mm	±0.25 (H), ±0.25 (V)
Active Display Area	119.802(H)×159.717(V)[mm]	mm	-
Product Thickness	2.06(D, Max.), ※ PCB area : 4.29(D, Typ)	mm	-
Weight	67g (max)	g	-

Notes : Please refer to a mechanic drawing in terms of tolerance as below.

4.1. Outline Demension



4-2. Thickness Demension

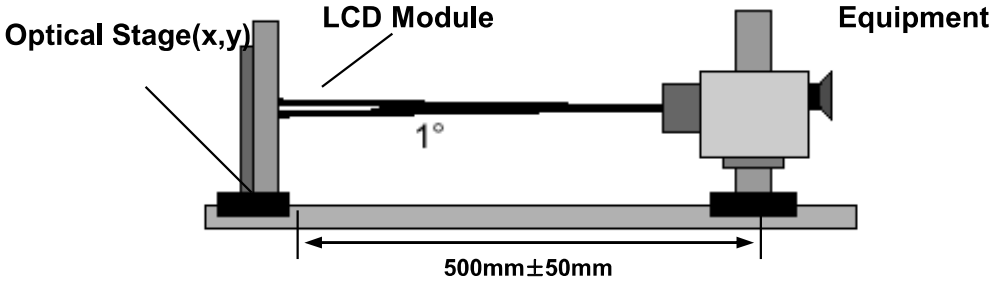


5. Optical specification

5.1 Electric-Optical specification

Optical characteristics are determined after the unit has been 'ON' and stable for approximately 20 minutes in a dark environment at 25°C. The values specified are at an approximate distance 50cm from the LCD surface at a viewing angle of Φ and Θ equal to 0°.
FIG. 1 presents additional information concerning the measurement equipment and method.

FIG. 1 Optical Characteristic Measurement Equipment and Method

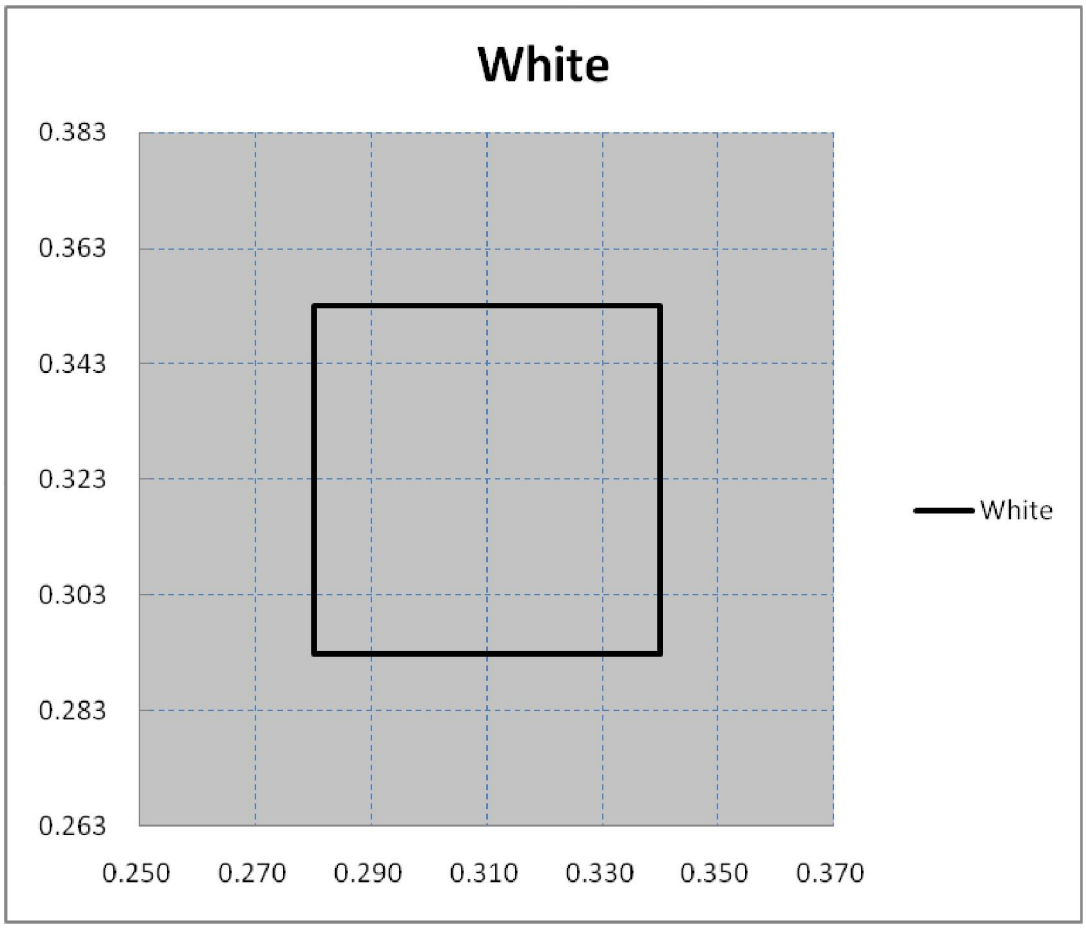


Room Temperature [25 ±3℃], fv=60Hz, V_{CC}=3.7V/fclk=200㎒/I_{LED} = 21.3mA

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Notes
Luminance (Average)		L_{AVE}	Center 4 Point (I_{LED}= 21.3mA)	330	420	-	cd/㎡	6.3
Luminance Uniformity		U	96point	65	80	-	%	6.4
C/R		-	Center 1 Point	TBD	1000	-	-	6.1
Respose Time		G to G	-	-	16	25	ms	6.2
Viewing Angel	Horizontal	Θ	φx(Left, Right)	±75	±80	-	°	CR ≥10
	Vertical	Θ	φyu(Upper)	75	80	-		
		Θ	φyd(Bottom)	75	80	-		
Cross Talk		D_{SHA}	-	-	-	2.0	%	7
Flicker		-	-	-	-	-22	dB	8
Gray Scale		-	-	Gamma2.2				5

5-2 White spec criteria

Items		Spec.			비고
Color		Min	Typ	Max	
Color (Total Rank)	Wxy	(0.280, 0.353) (0.280, 0.293)	0.310, 0.323	(0.340, 0.293) (0.340, 0.353)	
	Rx				Ref. 8.2.0
	Ry				
	Gx				
	Gy				
	Bx				
	By				



Note)

1. Specification about measurement Method & each measurement point is based on standard electric-optical specification.

2. Measure after turning on the B/L (at least 15sec. after).

3. Measurement must be done in the dark room, and in the circumstance which is the same as dark room.

(Photometer : PR-880, MS55 Lens, around illuminace : under 8lx)

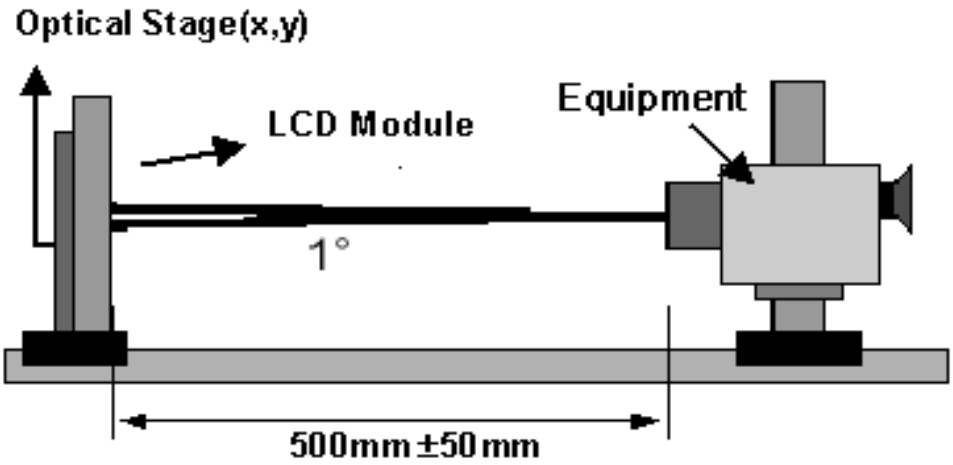
4. LED current I_{LED} =21.3mA

5. Gray scale specification

* f_V = 60Hz

	Gray Scale	Relative Luminance			Notes
		Min.	Typ.	Max.	
1	255	100.00	100.00	100.00	
2	239	70.20	86.71	96.50	
3	223	52.20	74.45	91.50	
4	207	41.00	63.20	83.80	
5	191	30.20	52.95	74.80	
6	175	22.00	43.68	65.00	
7	159	16.90	35.37	55.00	
8	143	12.20	28.01	45.00	
9	127	7.60	21.58	36.00	
10	111	4.60	16.04	28.00	
11	95	2.40	11.39	21.00	
12	79	1.10	7.59	15.20	
13	63	0.50	4.61	10.50	
14	47	0.15	2.42	7.10	
15	31	0.00	0.97	4.20	
16	15	0.00	0.20	2.00	
17	0	0.00	0.00	0.55	

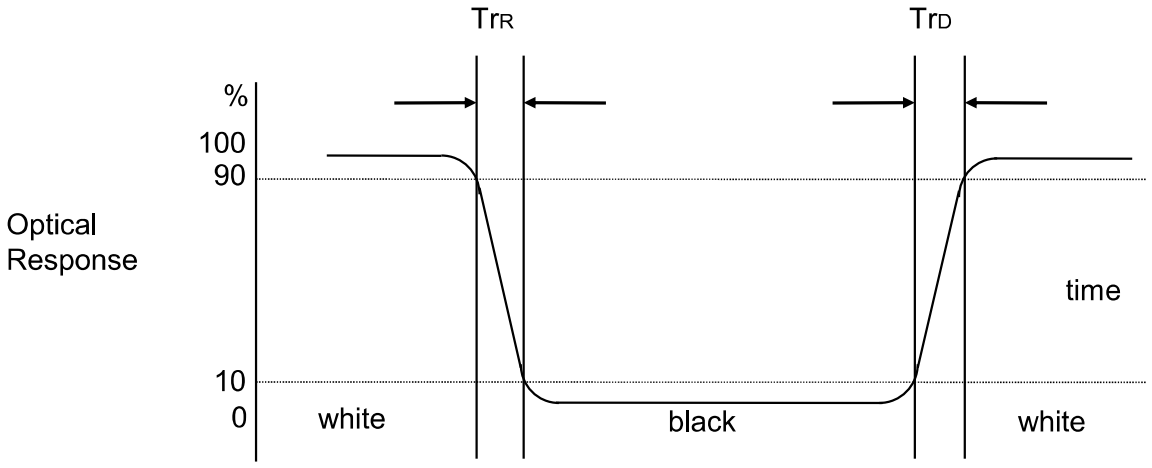
6. Measurement equipment and method



6.1. Definition Of Contrast Ratio

$$CR = \frac{\text{Full White}}{\text{Full Black}}$$

6.2. Definition Of Response Time



6.3 Average Luminance

L 4P ave = Average (L44,L45,L52,L53)

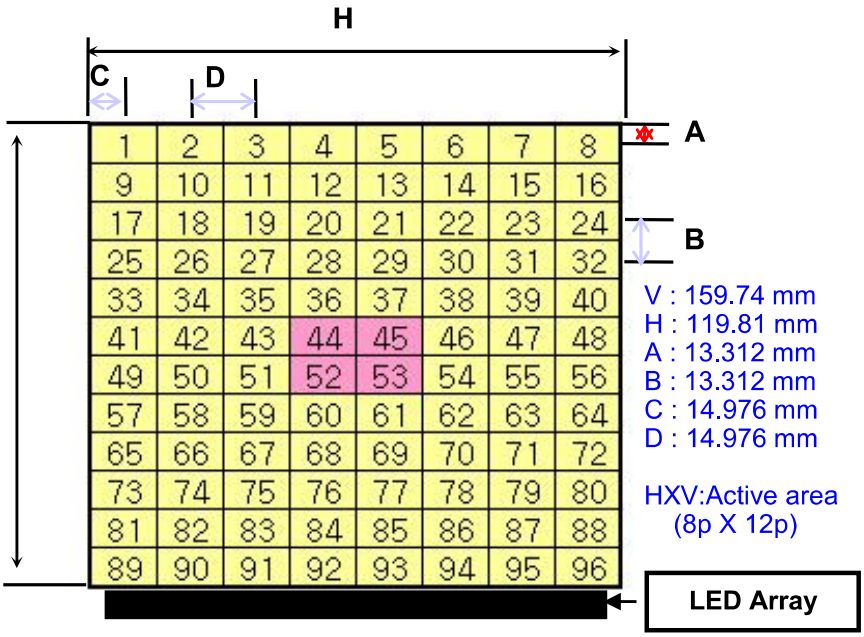
6.4 Luminance Uniformity

Luminance Uniformity:

U = 1 - (Lmax-Lmin)/Lmax (%)

where, Lmax = max {Luminance values at 96 points},

Lmin = min {Luminance values at 96 points}



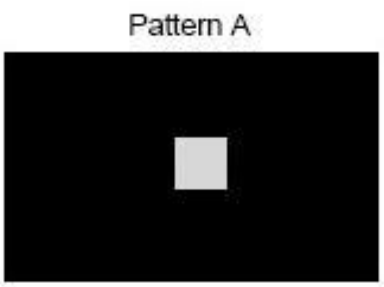
7. Cross-talk

No visual cross-talk will be allowed. Two luminance values are measured at center spot with 50 x 50 pixels. The cross-talk, D_{SHA}, is defined as,

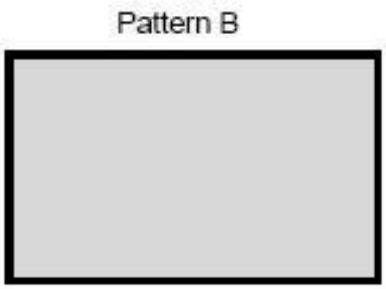
$$D_{SHA} = |(L_B - L_A)/L_B| \cdot 100\%,$$

Where, L_A = Luminance in Pattern A

L_B = Luminance in Pattern B.

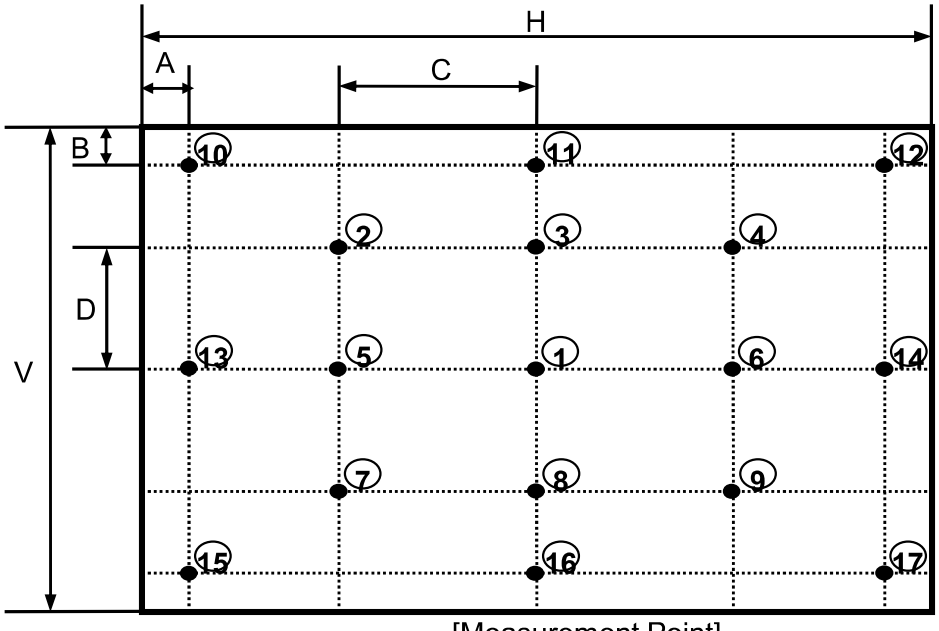


Pattern A
Gray Scale = 31 in center
Black in surrounding area



Pattern B
Gray Scale = 31 full screen

8. Flicker Measurement



[Measurement Point]

A : 10 mm
B : 10 mm
C : H/4 mm
D : V/4 mm
H : 196.61 mm
V : 147.46 mm
@ H,V: Active Area

6. Reliability

Environment test condition

No.	Test Item	Conditions
1	High temperature storage test	Ta= 60°C, 240h
2	Low temperature storage test	Ta= -20°C, 240h
3	High temperature operation test	Ta= 50°C, 50%RH, 240h
4	Low temperature operation test	Ta= 0°C, 240h
5	Vibration test (non-operating)	Sine wave, 10 ~ 500 ~ 10Hz, 1.5G, 0.37oct/min 3 axis, 1hour/axis
6	Shock test (non-operating)	Half sine wave, 180G, 2ms one shock of each six faces(I.e. run 180G 6ms for all six faces)
7	Altitude operating storage / shipment	0 ~ 10,000 feet (3,048m) 24Hr 0 ~ 40,000 feet (12,192m) 24Hr

{ Result Evaluation Criteria }
There should be no change which might affect the practical display function when the display quality test is conducted under normal operating condition.

7. International Standards

7-1. Safety

a) UL 60950-1:2003, First Edition, Underwriters Laboratories, Inc.,
Standard for Safety of Information Technology Equipment.
b) CAN/CSA C22.2, No. 60950-1-03 1st Ed. April 1, 2003, Canadian Standards Association,
Standard for Safety of Information Technology Equipment.
c) EN 60950-1:2001, First Edition,
European Committee for Electrotechnical Standardization(CENELEC)
European Standard for Safety of Information Technology Equipment.

7-2. EMC

a) ANSI C63.4 “Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electrical Equipment in the Range of 9kHZ to 40GHz. “American National Standards Institute(ANSI), 1992
b) C.I.S.P.R “Limits and Methods of Measurement of Radio Interface Characteristics of Information Technology Equipment.“ International Special Committee on Radio Interference.
c) EN 55022 “Limits and Methods of Measurement of Radio Interface Characteristics of Information Technology Equipment.“ European Committee for Electrotechnical Standardization.(CENELEC), 1998
(Including A1: 2000)

8. PRECAUTIONS

Please pay attention to the followings when you use this TFT LCD module.

8-1. MOUNTING PRECAUTIONS

(1) You must mount a module using holes arranged in four corners or four sides.
(2) You should consider the mounting structure so that uneven force (ex. Twisted stress) is not applied to the module. And the case on which a module is mounted should have sufficient strength so that external force is not transmitted directly to the module.
(3) Please attach the surface transparent protective plate to the surface in order to protect the polarizer. Transparent protective plate should have sufficient strength in order to the resist external force.
(4) You should adopt radiation structure to satisfy the temperature specification.
(5) Acetic acid type and chlorine type materials for the cover case are not desirable because the former generates corrosive gas of attacking the polarizer at high temperature and the latter causes circuit break by electro-chemical reaction.
(6) Do not touch, push or rub the exposed polarizers with glass, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment.
Do not touch the surface of polarizer for bare hand or greasy cloth.(Some cosmetics are detrimental to the polarizer.)
(7) When the surface becomes dusty, please wipe gently with absorbent cotton or other soft materials like chamois soaks with petroleum benzene. Normal-hexane is recommended for cleaning the adhesives used to attach front / rear polarizers. Do not use acetone, toluene and alcohol because they cause chemical damage to the polarizer.
(8) Wipe off saliva or water drops as soon as possible. Their long time contact with polarizer causes deformations and color fading.
(9) Do not open the case because inside circuits do not have sufficient strength.

8-2. OPERATING PRECAUTIONS

(1) The spike noise causes the mis-operation of circuits. It should be lower than following voltage :
V=± 200mV(Over and under shoot voltage)

(2) Response time depends on the temperature.(In lower temperature, it becomes longer.)
(3) Brightness depends on the temperature. (In lower temperature, it becomes lower.)
And in lower temperature, response time(required time that brightness is stable after turned on) becomes longer.
(4) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
(5) When fixed patterns are displayed for a long time, remnant image is likely to occur.
(6) Module has high frequency circuits. Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding methods may be important to minimized the interference.

8-3. ELECTROSTATIC DISCHARGE CONTROL

Since a module is composed of electronic circuits, it is not strong to electrostatic discharge. Make certain that treatment persons are connected to ground through wrist band etc. And don't touch interface pin directly.

8-4. PRECAUTIONS FOR STRONG LIGHT EXPOSURE

Strong light exposure causes degradation of polarizer and color filter.

8-5. STORAGE

When storing modules as spares for a long time, the following precautions are necessary.

(1) Store them in a dark place. Do not expose the module to sunlight or fluorescent light. Keep the temperature between 5°C and 35°C 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.

8-6. HANDLING PRECAUTIONS FOR PROTECTION FILM

(1) When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion-blown equipment or in such a condition, etc.
(2) The protection film is attached to the polarizer with a small amount of glue. If some stress is applied to rub the protection film against the polarizer during the time you peel off the film, the glue is apt to remain on the polarizer.
Please carefully peel off the protection film without rubbing it against the polarizer.
(3) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the polarizer after the protection film is peeled off.
(4) You can remove the glue easily. When the glue remains on the polarizer surface or its vestige is recognized, please wipe them off with absorbent cotton waste or other soft material like chamois soaked with normal-hexane.

APPENDIX A. Enhanced Extended Display Identification Data (EEDID™) 1/3

	Byte (Dec)	Byte (Hex)	Field Name and Comments	Value (Hex)	Value (Bin)
Header	0	00	Header	00	00000000
	1	01	Header	FF	11111111
	2	02	Header	FF	11111111
	3	03	Header	FF	11111111
	4	04	Header	FF	11111111
	5	05	Header	FF	11111111
	6	06	Header	FF	11111111
	7	07	Header	00	00000000
Vendor / Product EDID Version	8	08	EISA manufacture code (3 Character ID) ETC	16	00010110
	9	09	EISA manufacture code (Compressed ASCII)	83	10000011
	10	0A	Panel Supplier Reserved - Product Code 0000h	00	00000000
	11	0B	(Hex. LSB first)	00	00000000
	12	0C	LCD Module Serial No - Preferred but Optional ("0" If not used)	00	00000000
	13	0D	LCD Module Serial No - Preferred but Optional ("0" If not used)	00	00000000
	14	0E	LCD Module Serial No - Preferred but Optional ("0" If not used)	00	00000000
	15	0F	LCD Module Serial No - Preferred but Optional ("0" If not used)	00	00000000
	16	10	Week of Manufacture 04 weeks	04	00000100
	17	11	Year of Manufacture 2013 years	17	00010111
	18	12	EDID structure version # = 1	01	00000001
	19	13	EDID revision # = 0	00	00000000
Display Parameters	20	14	Video input Definition = Digital signal	A5	10100101
	21	15	Max H image size (Rounded cm) = 16cm	10	00010000
	22	16	Max V image size (Rounded cm) = 12cm	0C	00001100
	23	17	Display gamma = (gamma*100)-100 = Example:(2.2*100)-100=120 = 2.2 Gamma	78	01111000
	24	18	Feature Support (no_DPMS, no_Active Off/Very Low Power, RGB color display, Timing BLK 1,no_ GTF)	06	00000110
Panel Color Coordinates	25	19	Red/Green Low Bits (RxRy/GxGy)	EF	11101111
	26	1A	Blue/White Low Bits (BxBy/WxWy)	05	00000101
	27	1B	Red X Rx = 0.640	A3	10100011
	28	1C	Red Y Ry = 0.330	54	01010100
	29	1D	Green X Gx = 0.300	4C	01001100
	30	1E	Green Y Gy = 0.600	99	10011001
	31	1F	Blue X Bx = 0.150	26	00100110
	32	20	Blue Y By = 0.060	0F	00001111
	33	21	White X Wx = 0.313	50	01010000
	34	22	White Y Wy = 0.329	54	01010100
Established Timings	35	23	Established timing 1 (00h if not used)	00	00000000
	36	24	Established timing 2 (00h if not used)	00	00000000
	37	25	Manufacturer's timings (00h if not used)	00	00000000
Standard Timing ID	38	26	Standard timing ID1 (01h if not used)	01	00000001
	39	27	Standard timing ID1 (01h if not used)	01	00000001
	40	28	Standard timing ID2 (01h if not used)	01	00000001
	41	29	Standard timing ID2 (01h if not used)	01	00000001
	42	2A	Standard timing ID3 (01h if not used)	01	00000001
	43	2B	Standard timing ID3 (01h if not used)	01	00000001
	44	2C	Standard timing ID4 (01h if not used)	01	00000001
	45	2D	Standard timing ID4 (01h if not used)	01	00000001
	46	2E	Standard timing ID5 (01h if not used)	01	00000001
	47	2F	Standard timing ID5 (01h if not used)	01	00000001
	48	30	Standard timing ID6 (01h if not used)	01	00000001
	49	31	Standard timing ID6 (01h if not used)	01	00000001
	50	32	Standard timing ID7 (01h if not used)	01	00000001
	51	33	Standard timing ID7 (01h if not used)	01	00000001
	52	34	Standard timing ID8 (01h if not used)	01	00000001
	53	35	Standard timing ID8 (01h if not used)	01	00000001

APPENDIX A. Enhanced Extended Display Identification Data (EEDID™) 2/3

	Byte (Dec)	Byte (Hex)	Field Name and Comments		Value (Hex)	Value (Bin)
Timing Descriptor #1	54	36	Pixel Clock/10,000 (LSB)	202.02 MHz @ 60.6Hz	EA	11101010
	55	37	Pixel Clock/10,000 (MSB)		4E	01001110
	56	38	Horizontal Active (lower 8 bits)	1536 Pixels	00	00000000
	57	39	Horizontal Blanking(Thp-HA) (lower 8 bits)	76 Pixels	4C	01001100
	58	3A	Horizontal Active / Horizontal Blanking(Thp-HA) (upper 4:4bits)		60	01100000
	59	3B	Vertical Avtive	2048 Lines	00	00000000
	60	3C	Vertical Blanking (Tvp-HA) (DE Blanking typ.for DE only panels)	20 Lines	14	00010100
	61	3D	Vertical Active : Vertical Blanking (Tvp-HA) (upper 4:4bits)		80	10000000
	62	3E	Horizontal Sync. Offset (Thfp)	12 Pixels	0C	00001100
	63	3F	Horizontal Sync Pulse Width (HSPW)	16 Pixels	10	00010000
	64	40	Vertical Sync Offset(Tvfp) : Sync Width (VSPW)	8 Lines : 4 Lines	84	10000100
	65	41	Horizontal Vertical Sync Offset/Width (upper 2bits)		00	00000000
	66	42	Horizontal Image Size (mm)		78	01111000
	67	43	Vertical Image Size (mm)		A0	10100000
	68	44	Horizontal Image Size / Vertical Image Size		00	00000000
	69	45	Horizontal Border = 0 (Zero for Notebook LCD)		00	00000000
	70	46	Vertical Border = 0 (Zero for Notebook LCD)		00	00000000
	71	47	Non-Interlace, Normal display, no stereo, Digital Separate (Vsync_NEG, Hsync_NEG)		18	00011000
Timing Descriptor #2	72	48	Flag		00	00000000
	73	49	Flag		00	00000000
	74	4A	Flag		00	00000000
	75	4B	Data Type Tag (Descriptor Defined by manufacturer)		10	00010000
	76	4C	Flag		00	00000000
	77	4D	Descriptor Defined by manufacturer		00	00000000
	78	4E	Descriptor Defined by manufacturer		00	00000000
	79	4F	Descriptor Defined by manufacturer		00	00000000
	80	50	Descriptor Defined by manufacturer		00	00000000
	81	51	Descriptor Defined by manufacturer		00	00000000
	82	52	Descriptor Defined by manufacturer		00	00000000
	83	53	Descriptor Defined by manufacturer		00	00000000
	84	54	Descriptor Defined by manufacturer		00	00000000
	85	55	Descriptor Defined by manufacturer		00	00000000
	86	56	Descriptor Defined by manufacturer		00	00000000
	87	57	Descriptor Defined by manufacturer		00	00000000
	88	58	(If<13 char--> 0Ah, then terminate with ASCII code 0Ah,set remaining char = 20h)		00	00000000
	89	59	(If<13 char--> 0Ah, then terminate with ASCII code 0Ah,set remaining char = 20h)		00	00000000
Timing Descriptor #3	90	5A	Flag		00	00000000
	91	5B	Flag		00	00000000
	92	5C	Flag		00	00000000
	93	5D	Data Type Tag (ASCII String)		FE	11111110
	94	5E	Flag		00	00000000
	95	5F	ASCII String	L	4C	01001100
	96	60	ASCII String	P	50	01010000
	97	61	ASCII String	0	30	00110000
	98	62	ASCII String	7	37	00110111
	99	63	ASCII String	9	39	00111001
	100	64	ASCII String	Q	51	01010001
	101	65	ASCII String	X	58	01011000
	102	66	ASCII String	1	31	00110001
	103	67	ASCII String	-	2D	00101101
	104	68	ASCII String	S	53	01010011
	105	69	ASCII String	P	50	01010000
	106	6A	ASCII String	0	30	00110000
	107	6B	ASCII String	V	56	01010110

APPENDIX A. Enhanced Extended Display Identification Data (EEDID™) 3/3

	Byte (Dec)	Byte (Hex)	Field Name and Comments			Value (Bin)
Timing Descriptor #4	108	6C	Flag		00	00000000
	109	6D	Flag		00	00000000
	110	6E	Flag		00	00000000
	111	6F	Data Type Tag (ASCII String)		FC	11111100
	112	70	Flag		00	00000000
	113	71	ASCII String	C	43	01000011
	114	72	ASCII String	O	6F	01101111
	115	73	ASCII String	L	6C	01101100
	116	74	ASCII String	O	6F	01101111
	117	75	ASCII String	R	72	01110010
	118	76	ASCII String	SPACE	20	00100000
	119	77	ASCII String	L	4C	01001100
	120	78	ASCII String	C	43	01000011
	121	79	ASCII String	D	44	01000100
	122	7A	(If<13 char--> 0Ah, then terminate with ASCII code 0Ah,set remaining char = 20h)		0A	00001010
	123	7B	(If<13 char--> 0Ah, then terminate with ASCII code 0Ah,set remaining char = 20h)		20	00100000
	124	7C	(If<13 char--> 0Ah, then terminate with ASCII code 0Ah,set remaining char = 20h)		20	00100000
	125	7D	(If<13 char--> 0Ah, then terminate with ASCII code 0Ah,set remaining char = 20h)		20	00100000
Checksum	126	7E	Extension flag (# of optional 255 panel ID extension block to follow, Typ = 0)		00	00000000
	127	7F	Check Sum (The 1-byte sum of all 255 bytes in this panel ID block shall = 0)		3F	00111111