

TFT LCD Approval Specification

MODEL NO.: PQ 3Q-01(M)

Customer: _____

Approved by: _____

Note:



CONTENTS

1	GENERAL DESCRIPTION	4
1.1	OVERVIEW	4
1.2	FEATURES.....	4
1.3	APPLICATIONS.....	4
1.4	GENERAL SPECIFICATIONS.....	4
1.5	MECHANICAL SPECIFICATIONS	4
2	ABSOLUTE MAXIMUM RATINGS	6
2.1	ABSOLUTE MAXIMUMS, ENVIRONMENTAL	6
2.2	ABSOLUTE MAXIMUMS, ELECTRICAL.....	7
3	ELECTRICAL CHARACTERISTICS	8
3.1	FUNCTIONAL BLOCK DIAGRAM	8
3.2	LCD ELECTRONICS SPECIFICATION.....	8
3.3	LVDS DATA FORMAT	11
3.4	INPUT SIGNAL TIMING SPECIFICATIONS.....	12
3.5	DISPLAY MODE CONTROL.....	13
3.6	TOTAL POWER CONSUMPTION	13
3.7	PIN ASSIGNMENT	14
3.8	PIXEL DATA FORMAT	15
3.9	POWER ON/OFF SEQUENCE	16
4	OPTICAL CHARACTERISTICS	17
4.1	TEST CONDITIONS.....	17
4.2	OPTICAL SPECIFICATIONS.....	17
6	PRECAUTIONS	22
6.1	SYSTEM MATCHING PRECAUTIONS	22
6.2	HANDLING PRECAUTIONS	22
6.3	STORAGE PRECAUTIONS	22
6.4	OPERATION PRECAUTIONS.....	22
6.5	OTHER PRECAUTIONS	22

www.display-solution.com



7	PACKING	23
7.1	CARTON.....	23
7.2	PALLET.....	24
8	DEFINITION OF LABELS	25
8.1	MODULE LABEL	25
8.2	CARTON LABEL	26
	APPENDIX EDID DATA STRUCTURE	27

Note: All specifications are subject to change without notice.

REVISION HISTORY

Version	Date	Page (New)	Section	Description
Ver 1.1	April 12, 2011	All	All	Revised for monochrome reflective mode module
Ver 1.2	April 18, 2011	All	All	Revised the model number back to PQ 3Qi-01
Ver 1.3	May 6, 2011	All	All	Revised the model number as PQ 3Qi-01(M)
Ver 1.4	May 8, 2011	P. 25 P. 26		Change "MONOCHROME" label to "(M)" label.

1 GENERAL DESCRIPTION

1.2 FEATURES

WSVGA (1024 x 600 pixels) resolution optionally addressable as 3072 x 600 rectangular pixels

3.3V LVDS (Low Voltage Differential Signaling) interface with 1 pixel/clock

Reflective display mode

1.3 APPLICATIONS

Mobile notebook or netbook

Multimedia tablet

1.4 GENERAL SPECIFICATIONS

Item	Specification	Unit	Note
Active Area	222.72 (H) x 125.28 (V) (10.06" diagonal)	mm	(1)
Bezel Opening Area	226.34 (H) x 128.1 (V)	mm	
Driver Element	a-Si TFT active matrix	-	-
Pixel Number	1024 x (3) x 600	pixel	(2)
Pixel Pitch	0.2175 (H) x 0.2088 (V)	mm	-
Pixel Arrangement	3 reflective subpixels	-	-
Display Operating Modes	Normally black, reflective	-	-
Surface Treatment	Hard coating (3H), Anti-Glare	-	-

1.5 MECHANICAL SPECIFICATIONS

Item		Min.	Typ.	Max.	Unit	Note
Module Size	Horizontal(H)	234.5	235.0	235.5	mm	(1)
	Vertical(V)	142.5	143.0	143.5	mm	
	Thickness(T)	-	4.9	5.2	mm	
Weight		-	185	195	g	

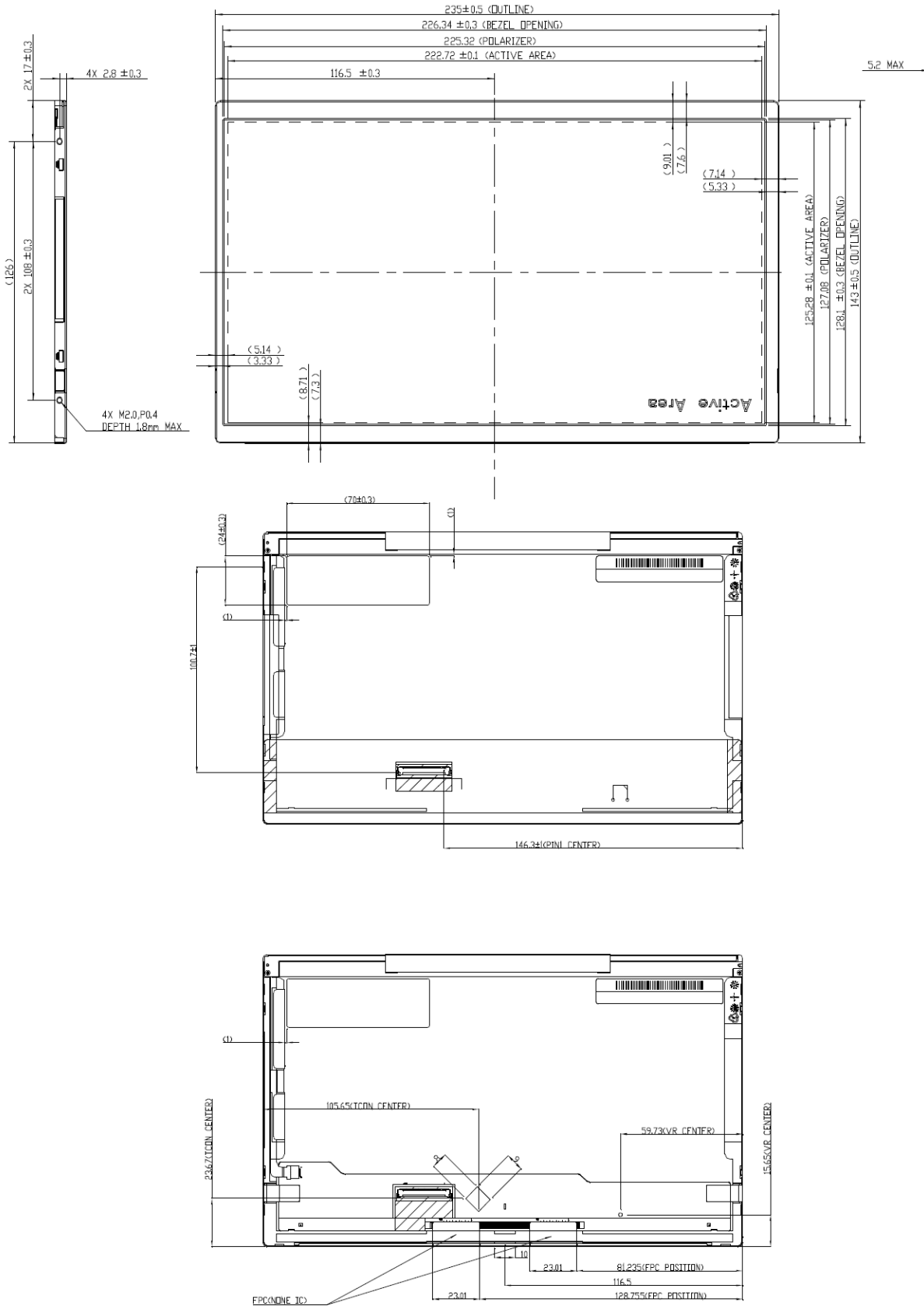
Note (1) Please refer to the attached drawings for more information of front and back outline dimensions.

Note (2) Each pixel is composed of 3 reflective subpixels (grayscale).



Pixel Qi

Doc No.: PQ006
Issued Date: May 8, 2011
Model No.: PQ 3Qi-01(M)



www.display-solution.com



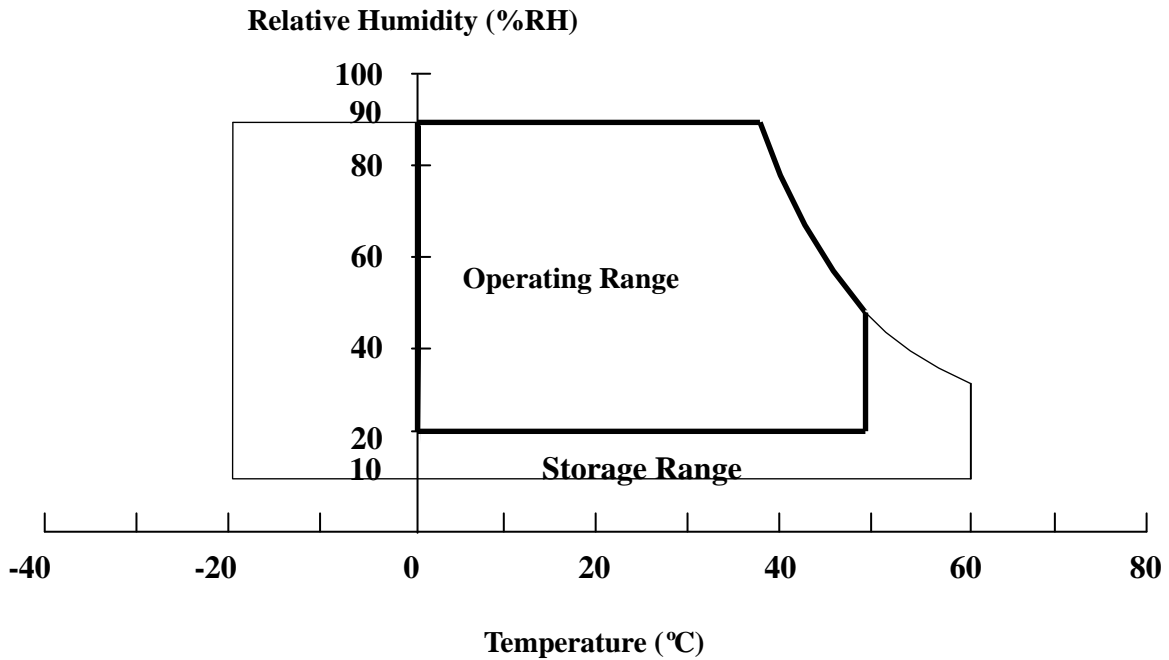
2 ABSOLUTE MAXIMUM RATINGS

2.1 ABSOLUTE MAXIMUMS, ENVIRONMENTAL

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Storage Temperature	T _{ST}	-20	+60	°C	(1)
Operating Ambient Temperature	T _{OP}	0	+50	°C	(1), (2)

(c) No condensation

Note (2) The temperature of panel surface area should be 0 °C min. and 50 °C max





2.2 ABSOLUTE MAXIMUMS, ELECTRICAL

Permanent damage to the device may occur if maximum values are exceeded. Operation should be restricted to the conditions described under Normal Operating Conditions.

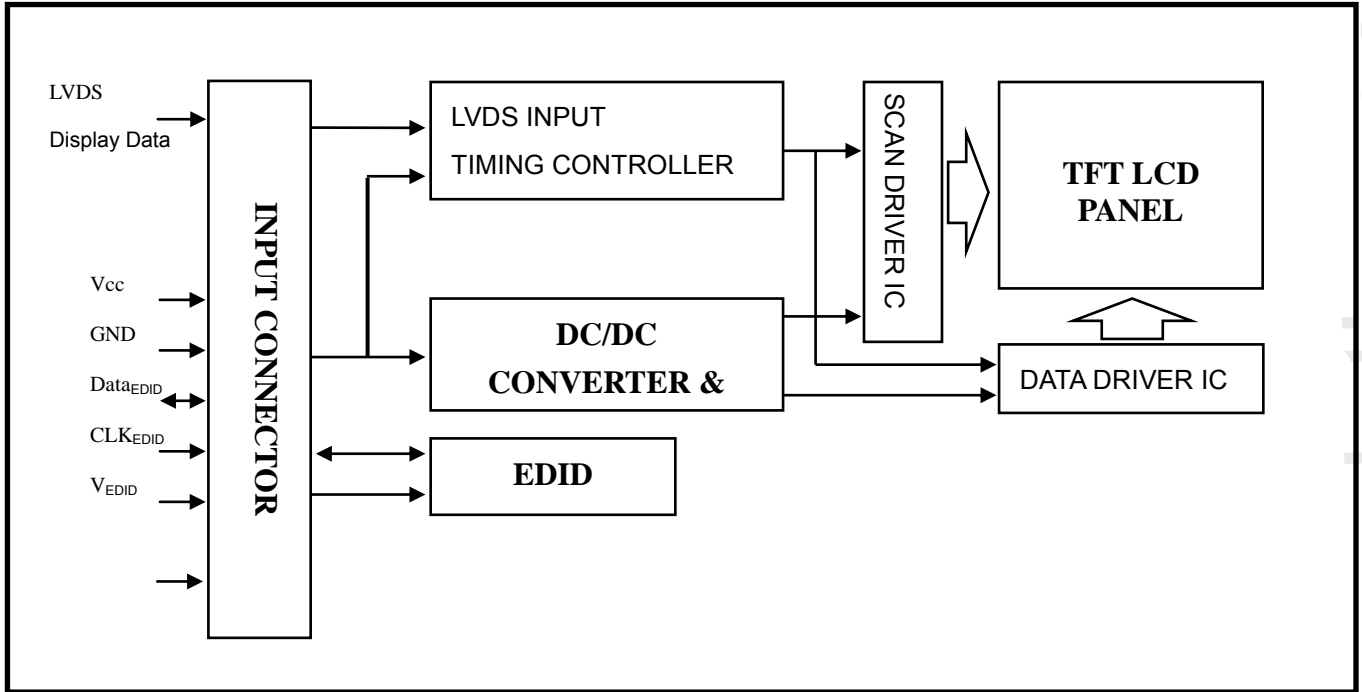
Item	Symbol	Value		Unit	Note
		Min.	Max.		
Power Supply Voltage	V_{CC}	-0.3	+4.0	V	
Logic Input Voltage	V_{IN}	-0.3	$V_{CC}+0.3$	V	

www.display-solution.com



3 ELECTRICAL CHARACTERISTICS

3.1 FUNCTIONAL BLOCK DIAGRAM



3.2 LCD ELECTRONICS SPECIFICATION

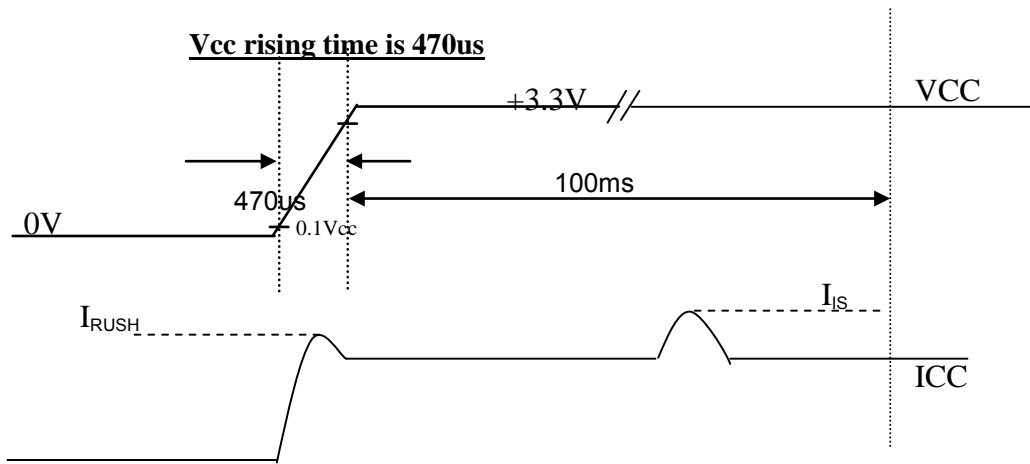
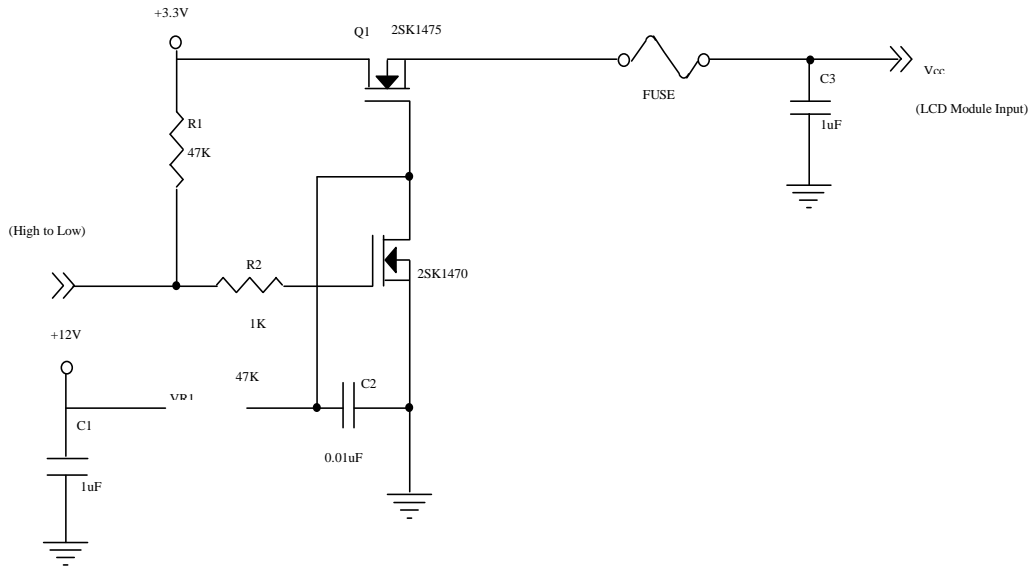
Parameter	Symbol	Value			Unit	Note	
		Min.	Typ.	Max.			
Power Supply Voltage	V _{CC}	3.0	3.3	3.6	V	-	
Ripple Voltage	V _{RP}	-	50	-	mV	-	
Rush Current	I _{RUSH}	-	-	1.5	A	(2)	
Initial Stage Current	I _{IS}	-	-	1.0	A	(2)	
Power Supply Current	White	I _{CC}	179	203	228	mA	(3)a
	Black	I _{CC}	135	153	171	mA	(3)b
LVDS Differential Input High Threshold	V _{TH(LVDS)}	-	-	+100	mV	(4), V _{CM} =1.2V	
			-100	-	mV	(4) V _{CM} =1.2V	
LVDS Common Mode Voltage	V _{CM}	1.125	-	1.375	V	(4)	
LVDS Differential Input Voltage	V _{ID}	100	-	600	mV	(4)	
Terminating Resistor	R _T	-	100	-	Ohm	-	

Note (1) The ambient temperature is Ta = 25 ± 2 °C.

Note (2) I_{RUSH}: the maximum current when V_{CC} is rising

I_{IS}: the maximum current of the first 100ms after power-on

Measurement Conditions: Shown in the following figure. Test pattern: black.



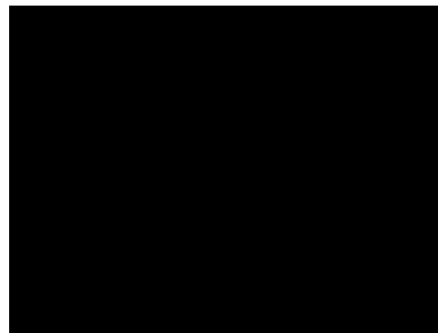
Note (3) The specified power supply current is under the conditions at $V_{cc} = 3.3\text{ V}$, $T_a = 25 \pm 2\text{ }^\circ\text{C}$, DC and $f_v = 60\text{ Hz}$, with a power dissipation check pattern (below) displayed.

a. White Pattern



Active Area

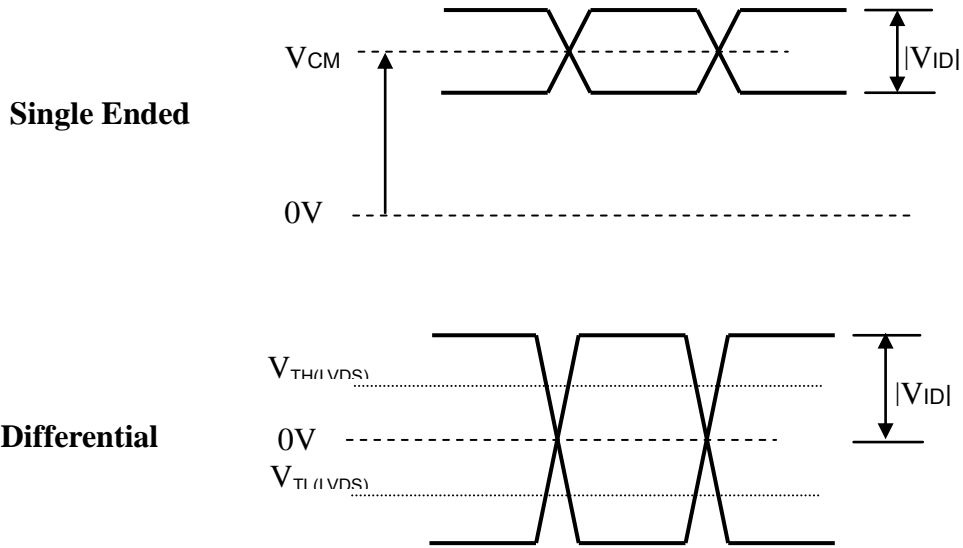
b. Black Pattern



Active Area



Note (4) The parameters of LVDS signals are defined as the following figures.

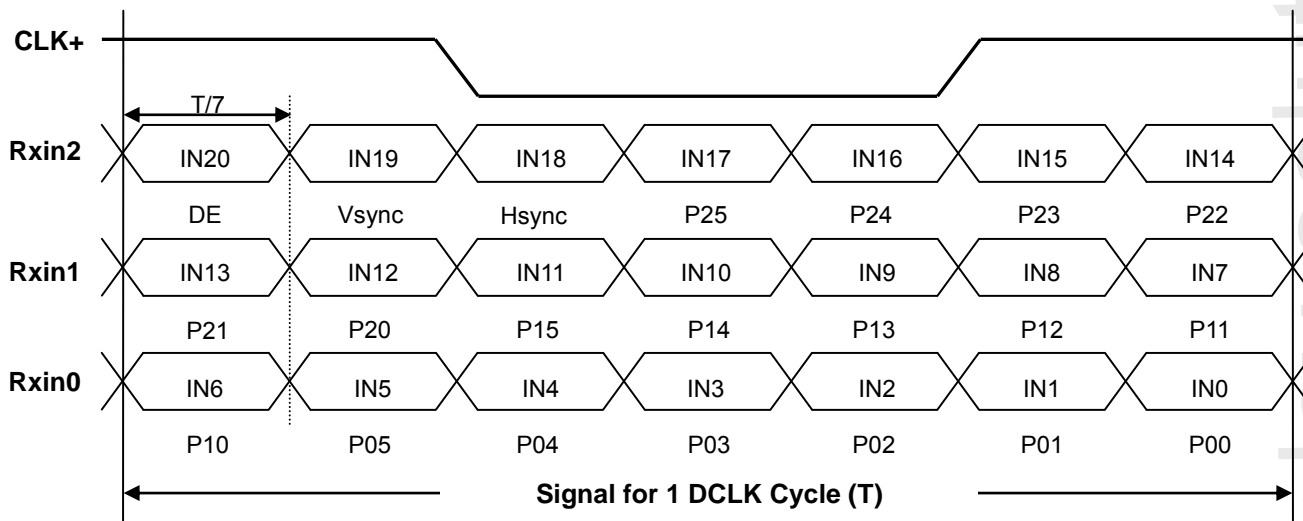


www.display-solution.com

3.3 LVDS DATA FORMAT

Each pixel comprises 3 sub-pixels P0, P1, and P2. There are 3 image data formats which can be displayed as 64-level monochrome image:

- i. 1024 x 600 Color R, G, and B format: In this case, P0=R, P1=G, and P2=B. Only the luminance value of the R/G/B data is displayed.
- ii. 1024 x 600 monochrome: The 6-bit luminance value (L) of the pixel is sent 3 times; P0=P1=P2=L.
- iii. 3072 (1024x3) x 600 monochrome: Each sub-pixel represents an individual grayscale pixel; P0=L0, P1=L1, P2=L2. With this format, the horizontal resolution is tripled. The aspect ratio of vertical dimension and horizontal dimension of each sub-pixel is 3:1. Please refer to Section 0
- iv. Pixel Data Format on page 15.



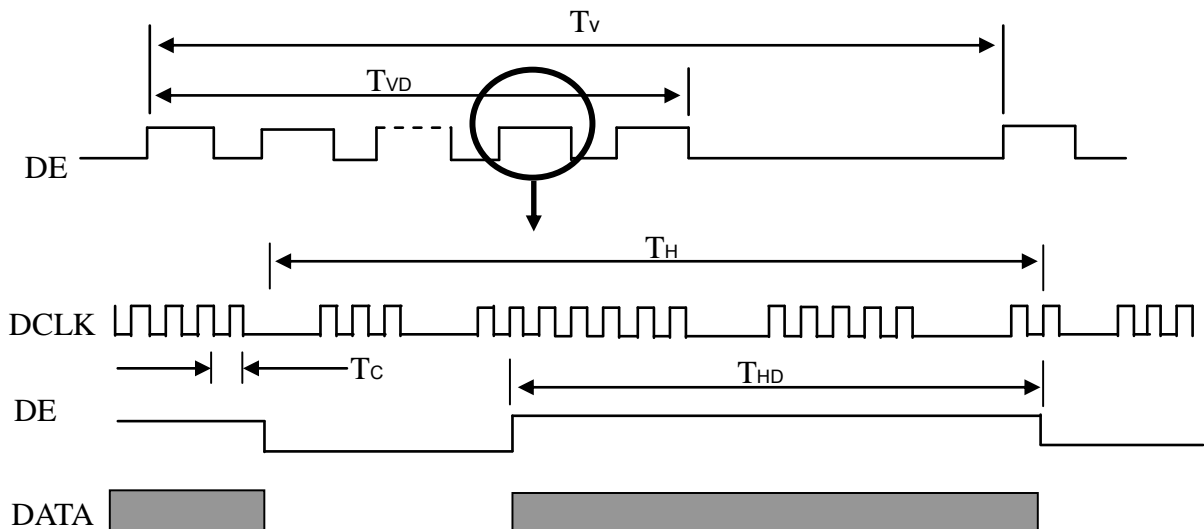
3.4 INPUT SIGNAL TIMING SPECIFICATIONS

The input signal timing specifications are shown as the following table and timing diagram.

Signal	Item	Symbol	Min.	Typ.	Max.	Unit	Note
DCLK	Frequency	1/Tc	21.74	43.97	46.15	MHz	-
DE	Vertical Total Time	TV	602	619	624	TH	-
	Vertical Active Display Period	TVD				TH	-
	Vertical Active Blanking Period	TVB	TV-TVD	19	TV-TVD	TH	-
	Horizontal Total Time	TH	1104	1184	1240	Tc	-
	Horizontal Active Display Period	THD	1024	1024	1024	Tc	-
	Horizontal Active Blanking Period	THB	TH-TH D	160	TH-TH D	Tc	-

Note (1) Because this module is operated in DE only mode, Hsync and Vsync are ignored.

INPUT SIGNAL TIMING DIAGRAM





3.5 DISPLAY MODE CONTROL: The display panel supports reflective mode.

3.6 TOTAL POWER CONSUMPTION

Mode	Preliminary Value			Unit	Note
	Min.	Typ.	Max.		
Reflective (Black and white with 64 gray shades)	0.52	0.59	0.64	W	(1) 60 fps
Reflective (Black and white with 64 gray shades)	0.39	0.43	0.48	W	(1) 30 fps

Note (1) Total power consumption includes LCD, TCON, drivers, TFT, and DC-DC converters. Power is measured with ANSI checkerboard pattern.

www.display-solution.com



3.7 PIN ASSIGNMENT

Pin	Symbol	Description	Polarity	Remark
1	NC	No Connection (Reserve)		
2	VCC	Power Supply		
3	VCC	Power Supply		
4	VEDID	DDC power		May be connected to VCC
5	NC	No Connection (Reserve for test)		
6	CLKEDID	DDC clock		
7	DATAEDID	DDC data		
8	Rxin0-	LVDS differential data input	Negative	
	Rxin0+	LVDS differential data input	Positive	
10	VSS	Ground		
11	Rxin1-	LVDS differential data input	Negative	G1~G5, B0, B1
12	Rxin1+	LVDS differential data input	Positive	
13	VSS	Ground		
14	Rxin2-	LVDS Differential Data Input	Negative	B2-B5,HS,VS, DE
15	Rxin2+	LVDS Differential Data Input	Positive	
16	VSS	Ground		
17	RxCLK-	LVDS differential clock input		
18	RxCLK+	LVDS differential clock input		
19	VSS	Ground		
20	NC	No Connection (Reserve)		
21	NC	No Connection (Reserve)		
22	VSS	Ground		
23	NC	No Connection (Reserve)		
24	NC	No Connection (Reserve)		
25	VSS	Ground		
26	NC	No Connection (Reserve)		
27	NC	No Connection (Reserve)		
28	VSS	Ground		
29	NC	No Connection (Reserve)		
30	NC	No Connection (Reserve)		
31	VSS	Ground		
32	VSS	Ground		
33	VSS	Ground		
34	NC	No Connection (Reserve)		
35	NC	No Connection (Reserve)		
36	NC	No Connection (Reserve)		
37	NC	No Connection (Reserve)		
38	NC	No Connection (Reserve)		
39	NC	No Connection (Reserve)		
40	NC	No Connection (Reserve)		

Note (1) Connector Part No.: IPEX-20455-040E-12 or equivalent

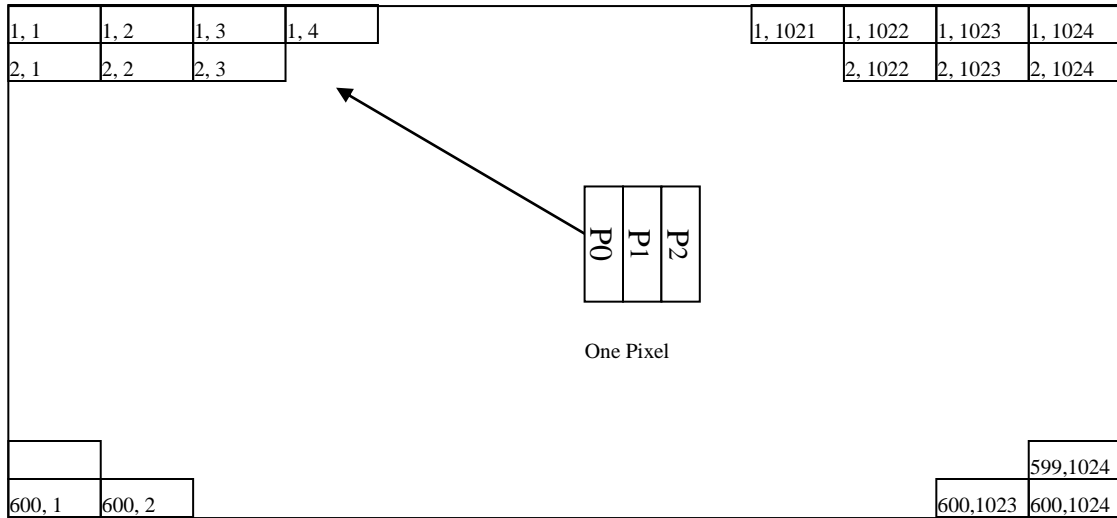
Note (2) User's connector Part No: IPEX-20453-040T-01 or equivalent

Note (3) The first pixel is odd as shown in the following figure.

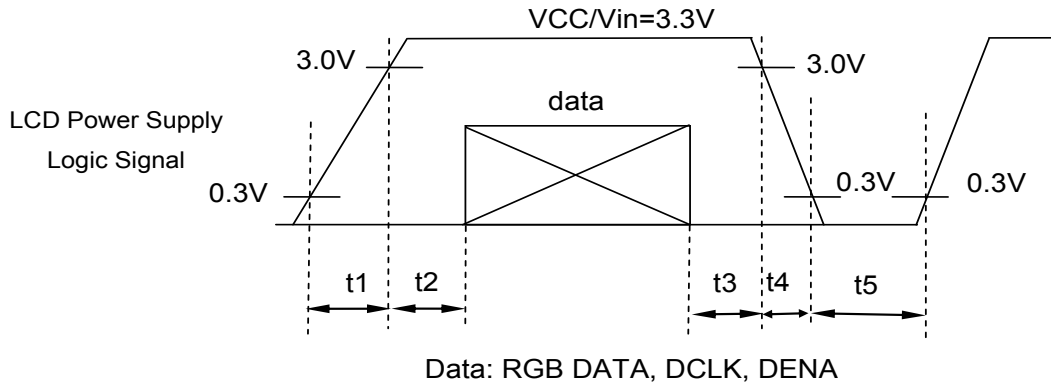
www.display-solution.com

3.8 Pixel Data Format

1024 x 600 monochrome pixel format is shown. There are 3 sub-pixels for each pixel. The aspect ratio of the sub-pixel is 3:1. This module is a reflective monochrome display. If the image data is in color R/G/B format, only the luminance value of the R/G/B data is displayed.



3.9 POWER ON/OFF SEQUENCE



Timing Specifications:

- $0.5 \leq t1 \leq 10 \text{ ms}$
- $0 \leq t2 \leq 50 \text{ ms}$
- $0 \leq t3 \leq 50 \text{ ms}$
- $0.5 \leq t4 \leq 10 \text{ ms}$
- $T5 \geq 500 \text{ ms}$

Note (1) Please follow the power on/off sequence described above. Otherwise, the LCD module might be damaged.

Note (2) Please avoid floating state of interface signal during invalid periods. When the interface signal is invalid, be sure to pull down the LCD power supply Vcc to 0 V.

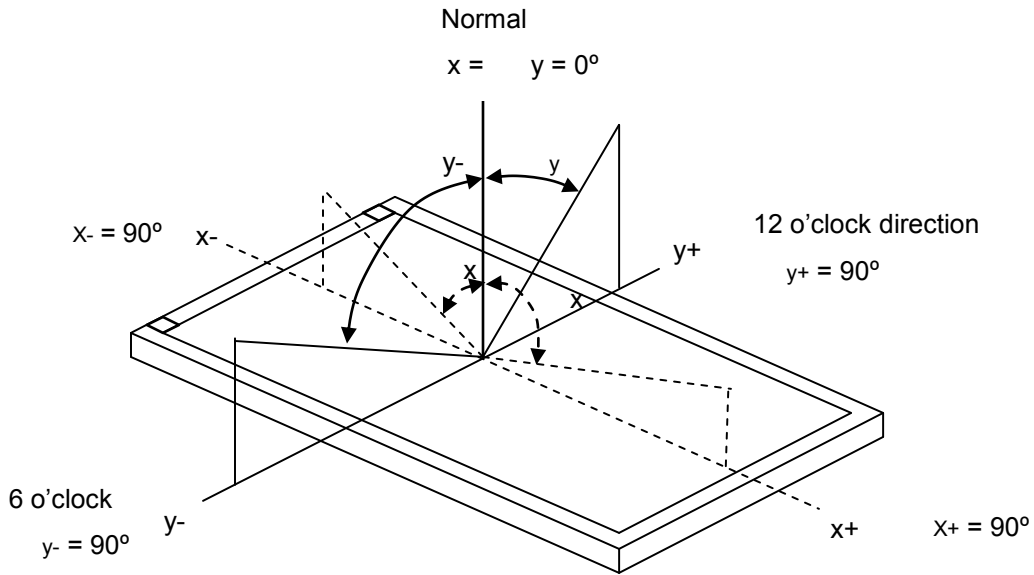
4 OPTICAL CHARACTERISTICS

4.1 TEST CONDITIONS

Item	Symbol	Value	Unit
Ambient Temperature	Ta	25 2	°C
Ambient Humidity	Ha	50 10	%RH
Supply Voltage	V _{CC}	3.3	V
Input Signal	According to typical values in "ELECTRICAL CHARACTERISTICS"		

4.2 OPTICAL SPECIFICATIONS

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Contrast Ratio Reflective	CR _R		3.5	5	-	-	(1), (2), (5), (6)
Response Time	T _R		-	6.5	11.5	ms	(3)
	T _F		-	13.5	18.5	ms	
Panel Reflectivity			23	27	-	%	(6)
Luminance of white	L _{sun}	10000+ lux ambient	1000				
Color Chromaticity, Reflective @D65	White	W _x	TYP. -0.05	0.310	TYP. +0.05		
		W _y		0.350			
Viewing Angle, Reflective Mode	Horizontal	x ⁺	30	40		Deg.	(1), (2), (6)
		x ⁻	30	40			
	Vertical	y ⁺	20	30			
		y ⁻	20	30			
White Variation (Reflective)	5 points	W _{r5p}	x=0 , y=0		1.11	1.33	(1), (5), (6)



Note (1) Definition of Viewing Angle (x , y):

Note (2) Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

$$\text{Contrast Ratio (CR)} = L63 / L0$$

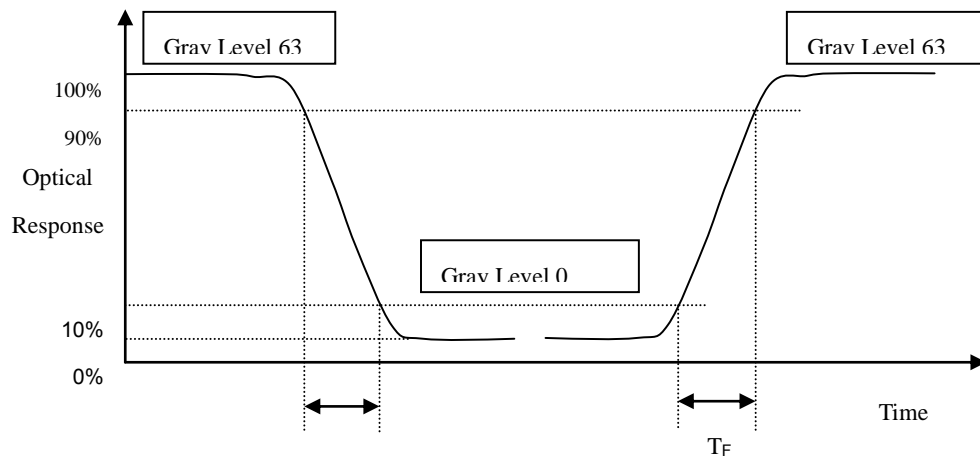
L63: Luminance of gray level 63

L 0: Luminance of gray level 0

$$CR = CR (1)$$

CR (X) is corresponding to the Contrast Ratio of the point X at Figure in Note (6).

Note (3) Definition of Response Time (T_R , T_F):



66 67



Note (4) Definition of Luminance of White (L):

Measure the luminance of gray level 63 at center point

$$L = L(1)$$

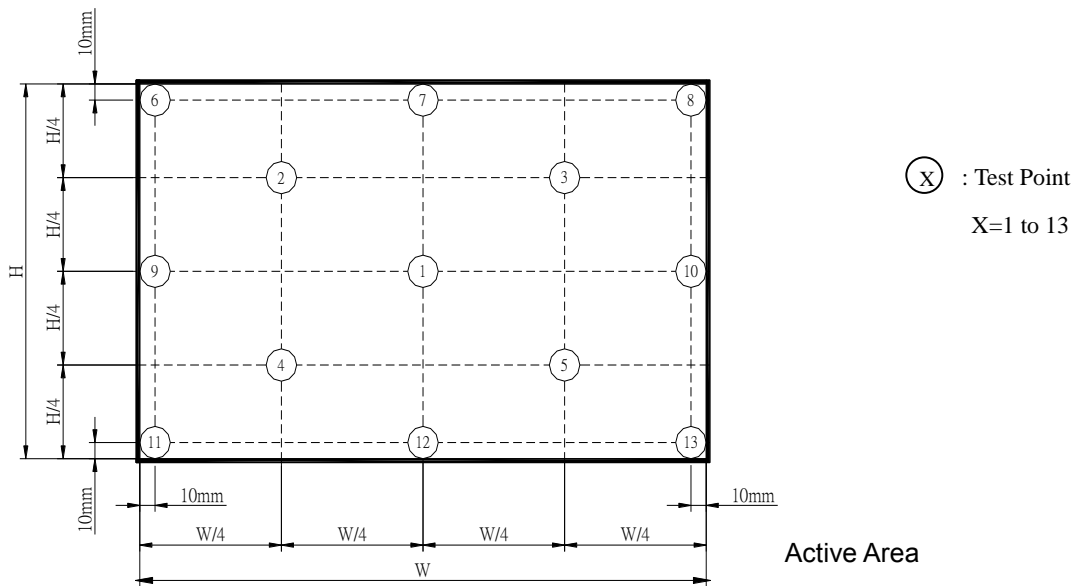
L(x) is corresponding to the luminance of the point X at Figure in Note (6)

W):

Measure the luminance of gray level 63 at 5 or 13 points

$$W_{5p} = \text{Maximum } [L(1) \sim L(5)] / \text{Minimum } [L(1) \sim L(5)]$$

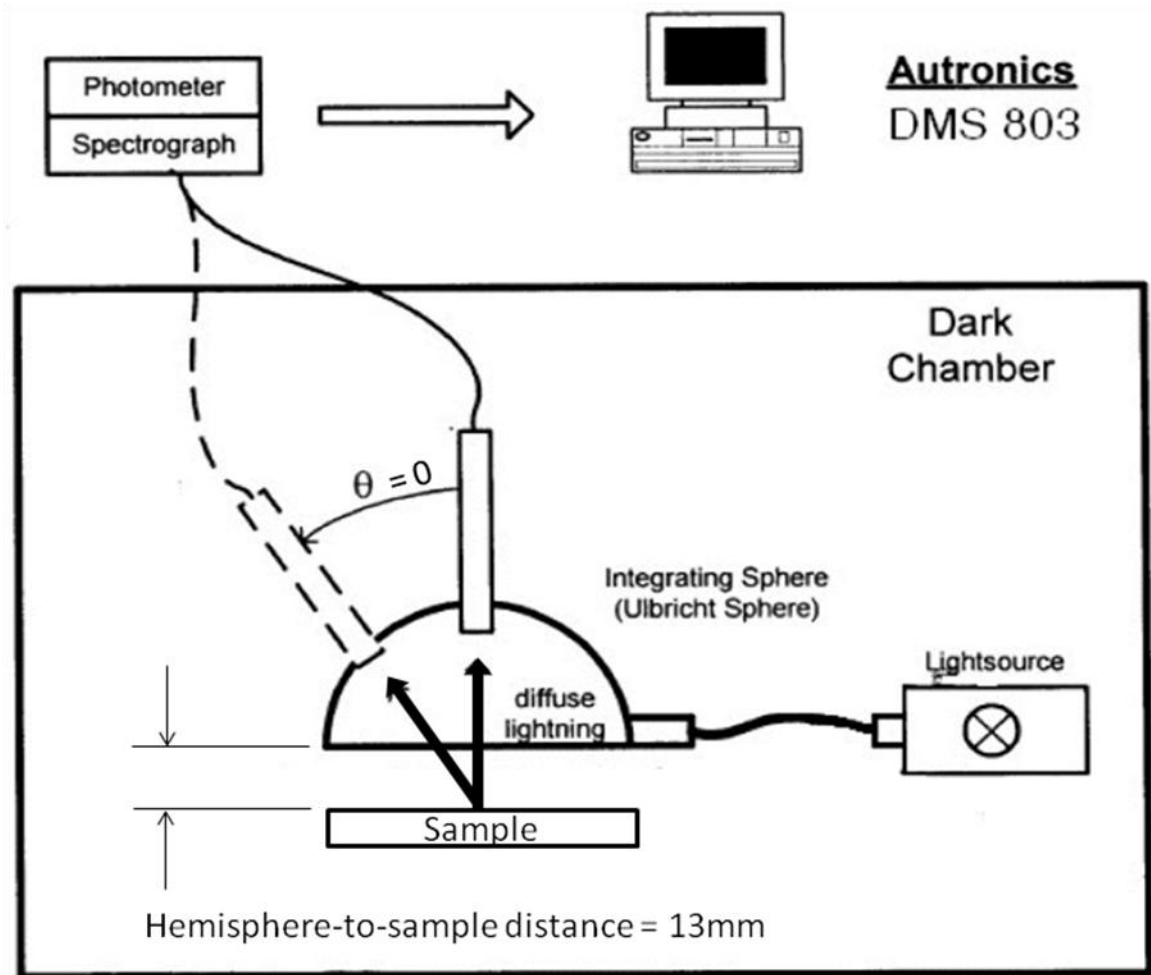
$$W_{13p} = \text{Maximum } [L(1) \sim L(13)] / \text{Minimum } [L(1) \sim L(13)]$$





Note (6) Reflective Mode Measurement Setup

The measurement should be executed after stabilizing the panel at a given temperature for 15 minutes in the case of abrupt temperature change. The measurement shall be executed after lighting the integrated diffuse light at rating 15 minutes.



5 RELIABILITY TEST ITEMS

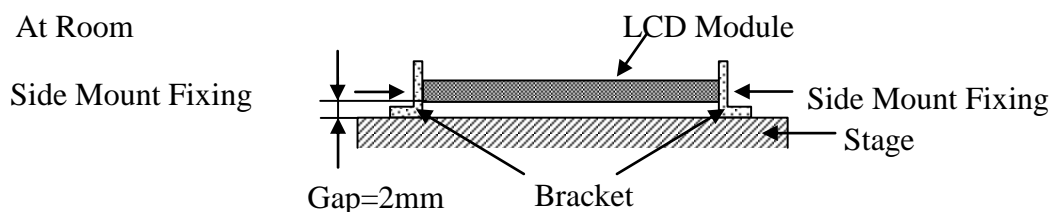
Test Item	Test Condition	Note
High Temperature Storage Test	60 °C, 240 hours	(1), (2)
Low Temperature Storage Test	-20 °C, 240 hours	
Thermal Shock Storage Test	-20 °C, 0.5 hour ↔ 60 °C, 0.5 hour; 100 cycles, 1 hour/cycle	
High Temperature Operation Test	50 °C, 240 hours	
Low Temperature Operation Test	0 °C, 240 hours	
High Temperature & High Humidity Operation Test	50 °C, 80% RH, 240 hours	
	Condition 2: Air Discharge, ± 15 kV	
Shock (Non-operating)	220 G, 2 ms, half sine wave, 1 time for each direction of ±X, ±Y, ±Z	(1), (3)
Vibration (Non-operating)	1.5 G / 10-500 Hz, sine wave, 30 min/cycle, 1 cycle for each X, Y, Z	(1), (3)

Note (1) Criteria: Normal display image with no obvious non-uniformity and no line defect

Note (2) Evaluation should be tested after storage at room temperature for more than 2 hours.

Note (3) At testing vibration and shock, the fixture holding the module has to be hard and rigid enough so that the module is not twisted or bent by the fixture.

The fixture configuration is shown below:



6 PRECAUTIONS

6.1 SYSTEM MATCHING PRECAUTIONS

- (1) Refer to the drawing.
- (2) To avoid wireless noise interference, please keep the antenna away from LCD control board.

6.2 HANDLING PRECAUTIONS

- (4) Do not press or scratch the surface harder than a HB pencil lead on the panel because the polarizer is very soft and easily scratched.
- (5) If the surface of the polarizer is dirty, please clean it by some absorbent cotton or soft cloth. Do not use Ketone type materials (ex. Acetone), Ethyl alcohol, Toluene, Ethyl acid or Methyl chloride. It might permanently damage the polarizer due to chemical reaction.
- (6) Wipe off water droplets or oil immediately. Staining and discoloration may occur if they left on panel for a long time.
- (7) If the liquid crystal material leaks from the panel, it should be kept away from the eyes or mouth. In case of contacting with hands, legs or clothes, it must be washed away thoroughly with soap.
- (8) Protect the module from static electricity; it may cause damage to the C-MOS Gate Array IC.
- (9) Do not disassemble the module.
- (10) Pins of I/F connector should not be touched directly with bare hands.

6.3 STORAGE PRECAUTIONS

- (1) High temperature or humidity may reduce the performance of module. Please store LCD module within the specified storage conditions.
- (2) It is dangerous that moisture come into or contacted the LCD module, because the moisture may damage LCD module when it is operating.
- (3) It may reduce the display quality if the ambient temperature is lower than 10 °C. For example, the response time will become slower.

6.4 OPERATION PRECAUTIONS

- (1) Do not pull the interface connector in or out while the module is operating.
- (2) Always follow the correct power on/off sequence when LCD module is connecting and operating. This can prevent the CMOS LSI chips from damage during latch-up.
- (3) Do not disassemble the module.

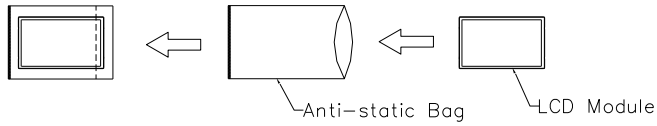
6.5 OTHER PRECAUTIONS

- (1) When fixed patterns are displayed for a long time, remnant image is likely to occur.

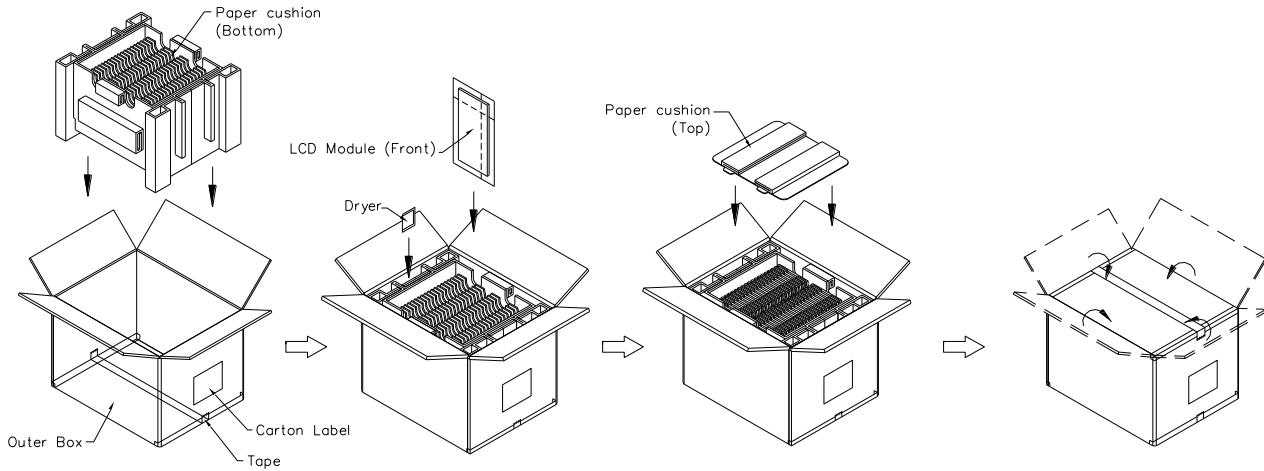


7 PACKING

7.1 CARTON



Box Dimensions : 435(L)*350(W)*320(H)
Weight: Approx. 10.4kg(40 module .per. 1 box)

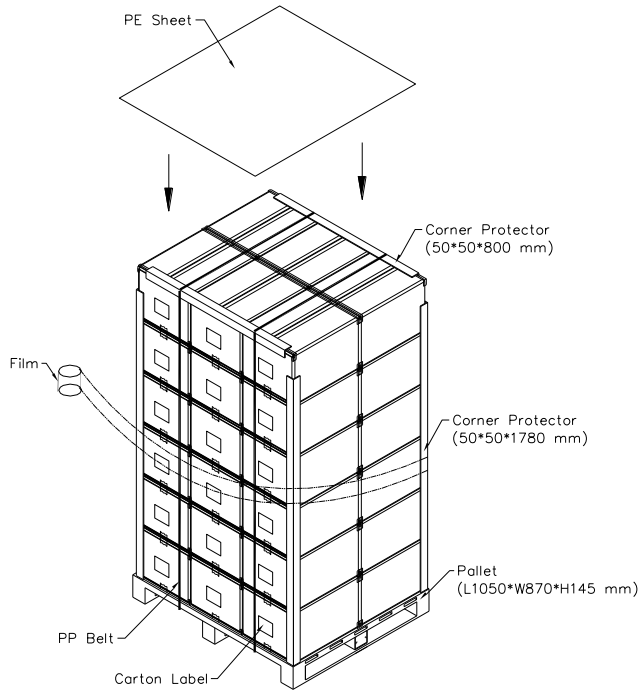


www.display-solution.com

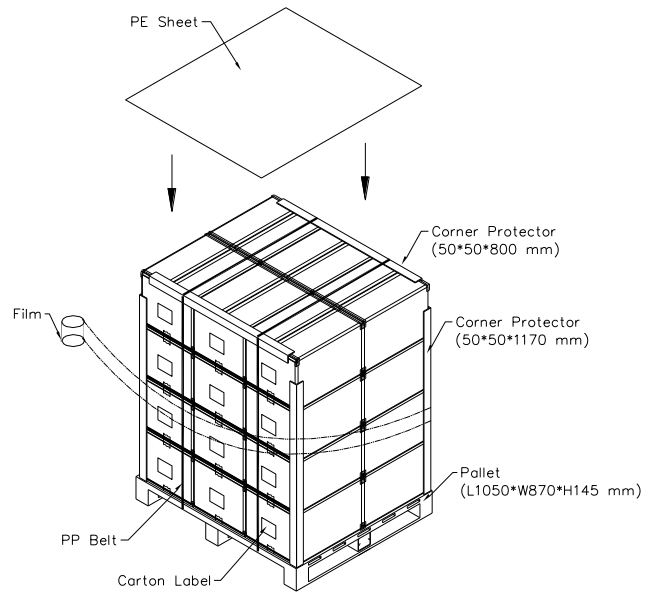


7.2 PALLET

Sea & Land Transportation



Air Transportation

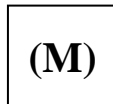


www.display-solution.com



8 DEFINITION OF LABELS

8.1 MODULE LABEL



(A) Model Name: PQ3Qi-01(M)

(B) Serial ID:


(C) Production Location: MADE IN XXXX, XXXX stands for production location.

(D) Manufactured Date : Year: 01~99 , for 2001~2099

Month:01~12, for Jan~Dec.

Date: 01~31 for 1st~31st

8.2 CARTON LABEL




Pixel Qi

PO.NO. _____

Part ID. _____

Model Name _____

Carton ID. _____ Quantities _____

www.pixelqi.com  **RoHS**

(M)

Model Name: PQ 3Qi-01(M)

www.display-solution.com



Appendix EDID DATA STRUCTURE

The EDID (Extended Display Identification Data) data formats are to support displays as defined in the VESA Plug & Display and FPD standards. This display supports monochrome reflective mode only, therefore all color related fields are not supported. These values are subject to change.

Byte # (decimal)	Byte # (hex)	Field Name and Comments	Value (hex)	Value (binary)
0	0	Header	00	00000000
1	1	Header	FF	11111111
2	2	Header	FF	11111111
3	3	Header	FF	11111111
4	4	Header	FF	11111111
5	5	Header	FF	11111111
6	6	Header	FF	11111111
7	7	Header	00	00000000
8	8	EISA ID manufacturer name ("PQI")	42	01000010
9	9	EISA ID manufacturer name (Compressed ASCII)	29	00101001
10	0A	ID product code (N101L8-L01)	08	00001000
11	0B	ID product code (hex LSB first; N101L8-L01)	10	00010000
12	0C	ID S/N (fixed "0")	00	00000000
13	0D	ID S/N (fixed "0")	00	00000000
14	0E	ID S/N (fixed "0")	00	00000000
15	0F	ID S/N (fixed "0")	00	00000000
16	10	Week of manufacture (fixed week code)	28	00101000
17	11	Year of manufacture (fixed year code)	13	00010011
18	12	EDID structure version # ("1")	01	00000001
19	13	EDID revision # ("3")	03	00000011
20	14	Video I/P definition ("digital")	80	10000000
21	15	Max H image size ("22.272cm")	16	00010110
22	16	Max V image size ("12.528cm")	0C	00001100
23	17	Display Gamma (Gamma = "2.2")	78	01111000
24	18	Feature support ("RGB Color") -- please ignore	0A	00001010
25	19	Rx1, Rx0, Ry1, Ry0, Gx1, Gx0, Gy1, Gy0 -- please ignore	A3	10100011
26	1A	Bx1, Bx0, By1, By0, Wx1, Wx0, Wy1, Wy0 -- please ignore	95	10010101
27	1B	Rx=0.549 -- please ignore	8C	10001100
28	1C	Ry=0.342 -- please ignore	57	01010111
29	1D	Gx=0.324 -- please ignore	53	01010011
30	1E	Gy=0.550 -- please ignore	8C	10001100
31	1F	Bx=0.158 -- please ignore	28	00101000
32	20	By=0.161 -- please ignore	29	00101001
33	21	Wx=0.313 -- please ignore	50	01010000
34	22	Wy=0.341 -- please ignore	57	01010111
35	23	Established timings 1	00	00000000
36	24	Established timings 2	00	00000000



www.display-solution.com

Byte # (decimal)	Byte # (hex)	Field Name and Comments	Value (hex)	Value (binary)
37	25	Manufacturer's reserved timings	00	00000000
38	26	Standard timing ID # 1	01	00000001
39	27	Standard timing ID # 1	01	00000001
40	28	Standard timing ID # 2	01	00000001
41	29	Standard timing ID # 2	01	00000001
42	2A	Standard timing ID # 3	01	00000001
43	2B	Standard timing ID # 3	01	00000001
44	2C	Standard timing ID # 4	01	00000001
45	2D	Standard timing ID # 4	01	00000001
46	2E	Standard timing ID # 5	01	00000001
47	2F	Standard timing ID # 5	01	00000001
48	30	Standard timing ID # 6	01	00000001
49	31	Standard timing ID # 6	01	00000001
50	32	Standard timing ID # 7	01	00000001
51	33	Standard timing ID # 7	01	00000001
52	34	Standard timing ID # 8	01	00000001
53	35	Standard timing ID # 8	01	00000001
54	36	Detailed timing description # 2 40Hz Timing Pixel clock ("29.31MHz", According to VESA CVT Rev1.1)	2D	00101101
55	37	# 2 40Hz Timing Pixel clock (hex LSB first)	11	00010001
56	38	# 2 40Hz Timing H active ("1024")	00	00000000
57	39	# 2 40Hz Timing H blank ("160")	A0	10100000
58	3A	# 2 40Hz Timing H active : H blank ("1024 : 160")	40	01000000
59	3B	# 2 40Hz Timing V active ("600")	58	01011000
60	3C	# 2 40Hz Timing V blank ("19")	13	00010011
61	3D	# 2 40Hz Timing V active : V blank ("600 : 19")	20	00100000
62	3E	# 2 40Hz Timing H sync offset ("48")	30	00110000
63	3F	# 2 40Hz Timing H sync pulse width ("32")	20	00100000
64	40	# 2 40Hz Timing V sync offset : V sync pulse width ("3 : 10")	3A	00111010
65	41	# 2 40Hz Timing H sync offset : H sync pulse width : V sync offset : V sync width ("48: 32 : 3 : 10")	00	00000000
66	42	# 2 40Hz Timing H image size ("222 mm")	DE	11011110
67	43	# 2 40Hz Timing V image size ("125 mm")	7D	01111101
68	44	# 2 40Hz Timing H image size : V image size ("222 : 125")	00	00000000
69	45	# 2 40Hz Timing H boarder ("0")	00	00000000
70	46	# 2 40Hz Timing V boarder ("0")	00	00000000
71	47	# 2 40Hz Timing Non-interlaced ; Normal display, no stereo ; Digital Separate ; V sync POL is negative ; H sync POL is positive	18	00011000
72	48	Detailed timing description # 1 Pixel clock ("43.97MHz", According to VESA CVT Rev1.1)	74	01110100
73	49	# 1 Pixel clock (hex LSB first)	0B	00001011
74	4A	# 1 H active ("1024")	00	00000000
75	4B	# 1 H blank ("160")	A0	10100000
76	4C	# 1 H active : H blank ("1024 : 160")	40	01000000
			58	01011000



www.display-solution.com

Byte # (decimal)	Byte # (hex)	Field Name and Comments	Value (hex)	Value (binary)
78	4E	# 1 V blank ("19")	13	00010011
79	4F	# 1 V active : V blank ("600 :19")	20	00100000
80	50	# 1 H sync offset ("48")	30	00110000
81	51	# 1 H sync pulse width ("32")	20	00100000
82	52	# 1 V sync offset : V sync pulse width ("3 : 10")	3A	00111010
83	53	# 1 H sync offset : H sync pulse width : V sync offset : V sync width ("48: 32 : 3 : 10")	00	00000000
84	54	# 1 H image size ("222 mm")	DE	11011110
85	55	# 1 V image size ("125 mm")	7D	01111101
86	56	# 1 H image size : V image size ("222 : 125")	00	00000000
87	57	# 1 H boarder ("0")	00	00000000
88				00000000
89	59	# 1 Non-interlaced, Normal, no stereo, Separate sync, H/V pol Negatives	18	00011000
90	5A	Detailed timing description # 3 30Hz Timing Pixel clock ("21.99MHz", According to VESA CVT Rev1.1)	97	10010111
91	5B	# 3 30Hz Timing Pixel clock (hex LSB first)	08	00001000
92	5C	# 3 30Hz Timing H active ("1024")	00	00000000
93	5D	# 3 30Hz Timing H blank ("160")	A0	10100000
94	5E	# 3 30Hz Timing H active : H blank ("1024 : 160")	40	01000000
95	5F	# 3 30Hz Timing V active ("600")	58	01011000
96	60	# 3 30Hz Timing V blank ("19")	13	00010011
97	61	# 3 30Hz Timing V active : V blank ("600 :19")	20	00100000
98	62	# 3 30Hz Timing H sync offset ("48")	30	00110000
99	63	# 3 30Hz Timing H sync pulse width ("32")	20	00100000
100	64	# 3 30Hz Timing V sync offset : V sync pulse width ("3 : 10")	3A	00111010
101	65	# 3 30Hz Timing H sync offset : H sync pulse width : V sync offset : V sync width ("48: 32 : 3 : 10")	00	00000000
102	66	# 3 30Hz Timing H image size ("222 mm")	DE	11011110
103	67	# 3 30Hz Timing V image size ("125 mm")	7D	01111101
104	68	# 3 30Hz Timing H image size : V image size ("222 : 125")	00	00000000
105	69	# 3 30Hz Timing H boarder ("0")	00	00000000
106	6A	# 3 30Hz Timing V boarder ("0")	00	00000000
107	6B	# 3 30Hz Timing Non-interlaced ; Normal display, no stereo ; Digital Separate ; V sync POL is negative ; H sync POL is positive	18	00011000
108	6C	Detailed timing description # 4	00	00000000
109	6D	# 4 Flag	00	00000000
110	6E	# 4 Reserved	00	00000000
111	6F	# 4 FE (hex) defines ASCII string (Model Name"PQ3Qi-01", ASCII)	FE	11111110
112	70	# 4 Flag	00	00000000
113	71	# 4 1st character of name ("P")	50	01010000
114	72	# 4 2nd character of name ("Q")	51	01010001
115	73	# 4 3rd character of name ("3")	33	00110011
116	74	# 4 4th character of name ("Q")	51	01010001
117	75	# 4 5th character of name ("I")	69	01101001



Byte # (decimal)	Byte # (hex)	Field Name and Comments	Value (hex)	Value (binary)
118	76	# 4 6th character of name ("-")	2D	00101101
119	77	# 4 7th character of name ("0")	30	00110000
120	78	# 4 8th character of name ("1")	31	00110001
121	79	# 4 New line character indicates end of ASCII string	0A	00001010
122	7A	# 4 Padding with "Blank" character	20	00100000
123	7B	# 4 Padding with "Blank" character	20	00100000
124	7C	# 4 Padding with "Blank" character	20	00100000
125	7D	# 4 Padding with "Blank" character	20	00100000
126	7E	Extension flag	00	00000000
127	7F	Checksum	E5	11100101

www.display-solution.com