

INDUSTRIAL STRENGTH... Start Your Application From YOURITECH

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System solutions

OEM Solutions

Custom Display

Production
Custom designs
Installation

Mechanical design



ET138BA01-IL

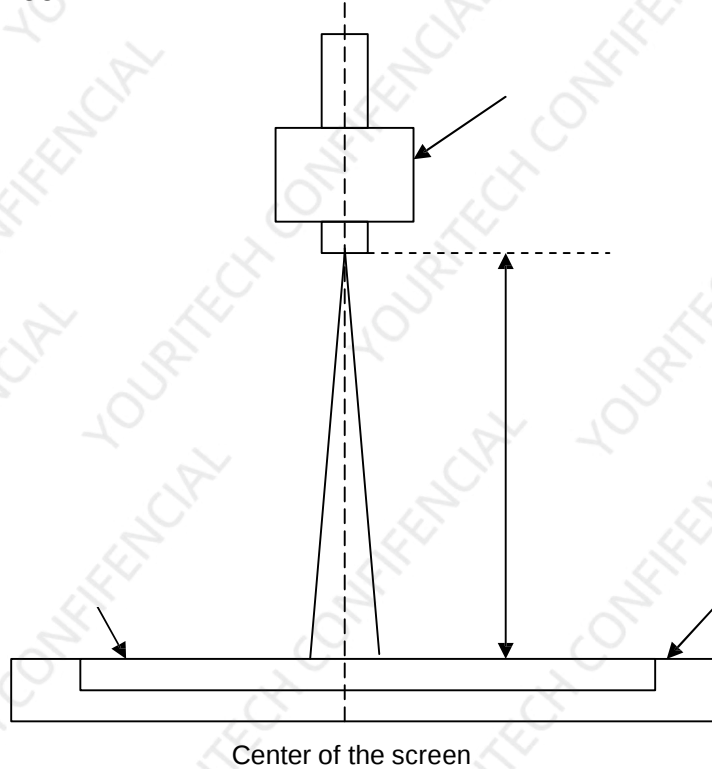


	Items	Specification	Unit	Note
General	Active Screen Size	19.5	inches	
	Display area	344.2x64.5	mm	
	Luminance	500	cd/m ²	
	Contrast Ratio	1000:1		
	Outline Dimension	371.2(H) x 91.5 (V) x 14(D)	mm	
	Source Input			
	Input Voltage			
	Power Consumption	16	Watt	
	Weight	1.6	kg	
	Life Time	50000	Hrs	
	Operating Temperature	0 - 50	°C	
	Storage Temperature	-20 - 60	°C	
	Operating Humidity	10 - 90	%RH	
	Storage Humidity	10 - 90	%RH	
Panel	Pixel Format	1366 x 256	Pixels	
	Pixel Pitch	0.252 (H) x0.252 (W)	mm	
	Color Depth	16777216	Color	8-bit
	Viewing Angle	85/85/80/80 (R/L/U/D)		CR>10
	Surface Treatment	Hard coating(3H) & Anti-Glare treatment of the front polarizer		
	input	LVDS (1 ch, 8-bit) , 30 pins		
	Backlight	WLED		



Note 1: Measurement method

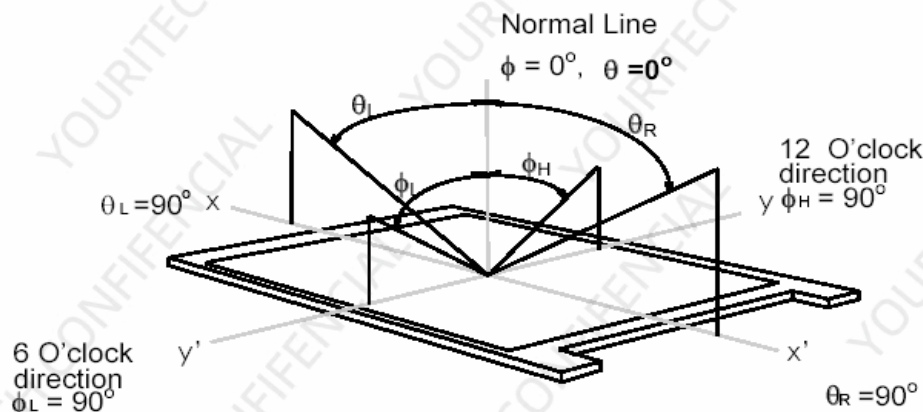
The LCD module should be stabilized at given temperature for 30 minutes to avoid abrupt temperature change during measuring (at surface 35rJ). In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 30 minutes in a stable, windless and dark room.



Note 2: Definition of viewing angle measured by ELDIM (EZContrast 88)

Viewing angle is the measurement of contrast ratio ≥ 10 , at the screen center, over a 180°

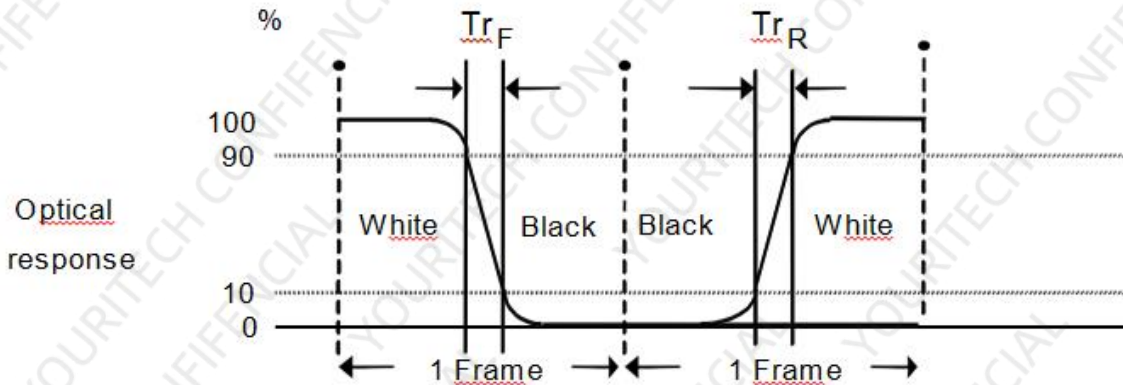
horizontal and 180° vertical range (off-normal viewing angles). The 180° viewing angle range is broken down as follows; 90° (θ) horizontal left and right and 90° (ϕ) vertical, high (up) and low (down). The measurement direction is typically perpendicular to the display surface with the screen rotated about its center to develop the desired measurement viewing angle.



Note 3: Contrast ratio is measured by TOPCON SR-3

Note 4: Definition of Response time measured by Westar TRD-100A

The output signals of photo detector are measured when the input signals are changed from “Full Black” to “Full White” (rising time, Tr_R), and from “Full White” to “Full Black” (falling time, Tr_F), respectively. The response time is interval between the 10% and 90% (1 frame at 60 Hz) amplitudes.



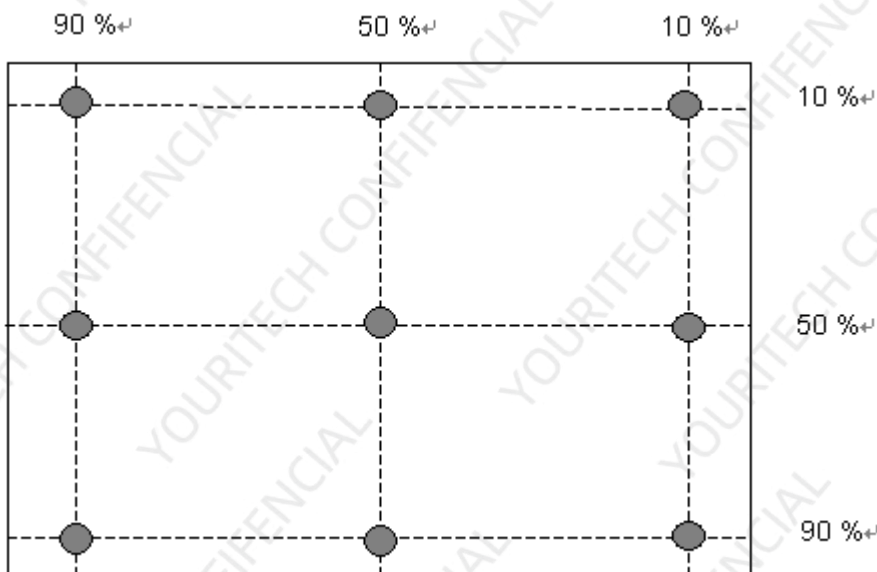
$Tr_R + Tr_F = 5 \text{ msec (typ.)}$.

Algorithm: | Gray Level A – Gray Level B | rJ16, then the average gray to gray response time is 2 ms, (F= 60 Hz).

Note 5: Color chromaticity and coordinates (CIE) is measured by TOPCON SR-3

Note 6: Central luminance is measured by TOPCON SR-3

Note 7: Luminance uniformity of these 9 points is defined as below and measured by TOPCON SR-3



$$\text{Uniformity} = \frac{\text{Minimum Luminance in 9 points (1-9)}}{\text{Maximum Luminance in 9 Points (1-9)}}$$



2. Connector

2.1 TFT LCD Module

The module using one LVDS receiver SN75LVDS82(Texas Instruments). LVDS is a differential signal technology for LCD interface and high speed data transfer device. LVDS transmitters shall be SN75LVDS83(negative edge sampling). The first LVDS port(RxOxxx) transmits odd pixels while the second LVDS port(RxExxx) transmits even pixels.

PIN #	SIGNAL NAME	DESCRIPTION
1	Reserved	No Connection
2	Reserved	No Connection
3	Reserved	No Connection
4	GND	Ground
5	RXIN0-	-LVDS Differential Data Input, CH0
6	RXIN0+	+LVDS Differential Data Input, CH0
7	GND	Ground
8	RXIN1-	-LVDS Differential Data Input, CH1
9	RXIN1+	+LVDS Differential Data Input, CH1
10	GND	Ground
11	RXIN2-	-LVDS Differential Data Input, CH2
12	RXIN2+	+LVDS Differential Data Input, CH2
13	GND	Ground
14	RXCLKIN-	-LVDS Differential Clock Input, CH3
15	RXCLKIN+	+LVDS Differential Clock Input, CH3
16	GND	Ground
17	RXIN3-	-LVDS Differential Data Input, CH3
18	RXIN3+	+LVDS Differential Data Input, CH3
19	GND	Ground
20	Reserved	Internal used (recommend no connection)
21	Reserved	Internal used (recommend no connection)
22	Reserved	Internal used (recommend no connection)
23	GND	Ground
24	GND	Ground
25	GND	Ground
26	AVDD	Power +5V, (typical)
27	AVDD	Power +5V, (typical)
28	AVDD	Power +5V, (typical)
29	AVDD	Power +5V, (typical)
30	AVDD	Power +5V, (typical)



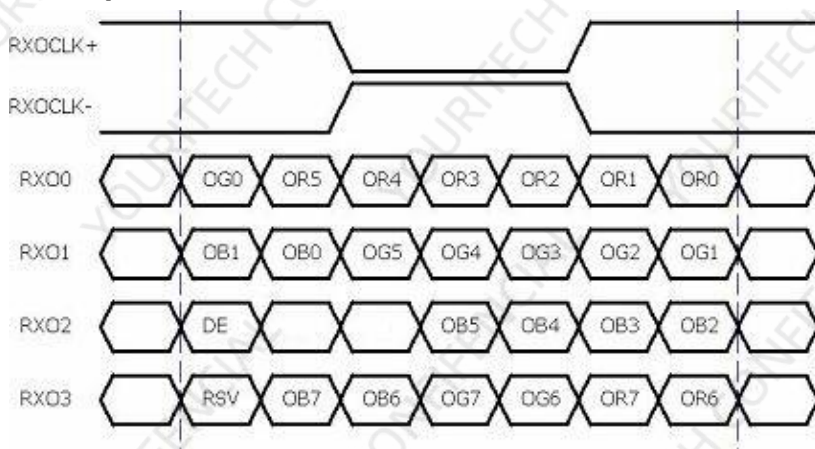
Timing Characteristics

Basically, interface timing described here is not actual input timing of LCD module but close to output timing of SN75LVDS82DGG (Texas Instruments) or equivalent.

Item		Symbol	Min	Typ	Max	Unit
Data CLK		Tclk	50	76	90	[MHz]
H-section	Period	Th	1446	1560	1936	[Tclk]
	DisplayArea	Tdisp(h)	1366	1366	1366	[Tclk]
	Blanking	Tblk(h)	80	200	570	[Tclk]
V-section	Period	Tv	778	806	888	[Th]
	DisplayArea	Tdisp(v)	768	768	768	[Th]
	Blanking	Tblk(v)	10	38	120	[Th]
Frame Rate		F	50	60	75	[Hz]

Note : DE mode only

The input data format



2.2 Backlight Unit:

PH2.0-6pin

Pin No.	Symbol	Description	note
1	VCC	Power supply voltage 12v	
2	VCC	Power supply voltage 12v	
3	ON/OFF	Output enable signal input 0~5V	
4	DIM	Dim signal input DC 0~5V	
5	GND	Power ground	
6	GND	Power ground	



3. Mechanical Characteristics

