

MDT080000C	1024 x 600	LVDS Interface	TFT Module
Specification			
Version: 1		Date: 07/07/2024	
Revision			
1	05/07/2024	First issue	

Display Features			
Display Size	8"		
Resolution	1024 x 600		
Orientation	Landscape		
Appearance	RGB		
Logic Voltage	3V		
Interface	LVDS		
Brightness	650 cd/m ²		
Touchscreen	CTP		
Module Size	192.80 x 116.90 x 7.85 mm		
Operating Temperature	-30°C ~ +80°C	Created By	Checked By
Pinout	40 way FFC	CL	TSB
Pitch	0.50 mm	Box Quantity	Weight / Display
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* - For full design functionality, please use this specification in conjunction with the HX8282+HX8696 display driver specification.(Provided Separately)

Display Accessories	
Part Number	Description
MBID-40FP	40 Way FFC to cable and wires. Driven by any driver board that can be wired to a 1mm pitch SHDR-40V-S-B receptacle.
MDIB-CC1	Interconnect board for standard pitch pinouts to fine pitch wires. Providing pinouts for 2.54 pinout. 1.27, 1, 0.845, 0.8, 0.7, 0.65, 0.62, 0.6, 0.5 & 0.3 pads.

Optional Variants	
Appearances	Voltage



1. GENERAL SPECIFICATIONS

ITEM	STANDARD VALUE	UNIT
LCD SIZE	8	inch
LCD TYPE	TFT/TN/ NORMALLY WHITE/TRANSMISSIVE	
MODULE SIZE	192.80*116.90*7.85	mm
ACTIVE AREA	176.64*99.36	mm
PIXEL PITCH (W*H)	0.1725*0.1656	mm
NUMBER OF PIXELS	1024*600	
DIVER IC	HX8282+HX8696	
INTERFACE TYPE	LVDS	
RECOMMEND VIEWING DIRECTION	12	O'CLOCK
GRAY SCALE INVERSION DIRECTION	6	O'CLOCK
COLORS	16.7 M	
BACKLIGHT TYPE	30-DIES WHITE LED	
TOUCH PANEL TYPE	CTP	

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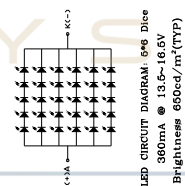
Touch Panel:

Item	Contents
Type	Capacitive Multi-touch
Module size	192.80(L)mm*116.90 (W)mm*1.35 (T) mm
View area	177.64(W)mm*100.36(H)mm
Driver IC	GT9110
Interface	I2C
Operation Voltage	2.7V~3.4V
ITO Glass thickness	0.4mm
Operation humidity	20~90%RH
Storage humidity	20~90%RH
Resolution	1024*600
Input force	$\leq 10g$
Temperature Operation	-30°C to +80°C
Temperature Storage	-30°C to +85°C
Input method	Finger or exclusive pen
Transparency	$\geq 80\%$
Surface hardness	>6H
Hitting life	>35,000,000 times
Insulation	20M ohm or over(Dc 25V)
ESD(Human body model)	2,000 V

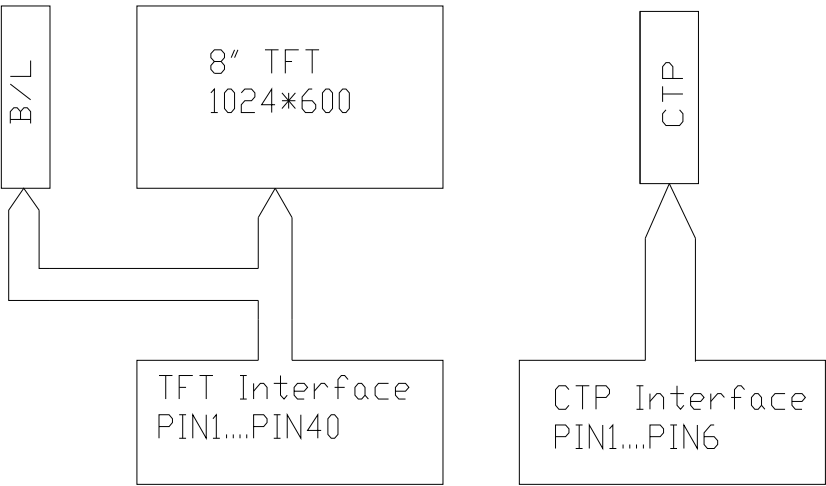


Remark:

- 1.Unmarked tolerance is ± 0.3
- 2.All materials comply with RoHS
3. ...critical dimension.
- 4.LED Lifetime:50000h.



3. BLOCK DIAGRAM



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4. PIN ASSIGNMENT

PIN NO.	SYMBOL	DESCRIPTION
1	VCOM	Common Voltage
2	VDD	Power supply
3	VDD	Power supply
4	NC	Not connection
5	RESET	Reset pin
6	STBYB	Standby mode, normally pulled high. STBYB = "1", normal operation STBYB = "0", timing controller, source driver will turn off, all output are High-Z
7	GND	Power ground
8	RXIN0-	Data lane0 input
9	RXIN0+	Data lane0 input
10	GND	Power ground
11	RXIN1-	Data lane1 input
12	RXIN1+	Data lane1 input
13	GND	Power ground
14	RXIN2-	Data lane2 input
15	RXIN2+	Data lane2 input
16	GND	Power ground
17	RXCLKIN-	CLK input
18	RXCLKIN+	CLK input
19	GND	Power ground
20	RXIN3-	Data lane3 input
21	RXIN3+	Data lane3 input
22	GND	Power ground
23	NC	Not connection
24	NC	Not connection
25	GND	Power ground
26	NC	Not connection
27	NC	Not connection
28	SELB	In LVDS interface connected HSD to FPC for Pin Setting SELB="L":8 bit SELB="H":6 bit
29	AVDD	Power for Analog Circuit
30	GND	Power ground
31	LED-	LED Cathode

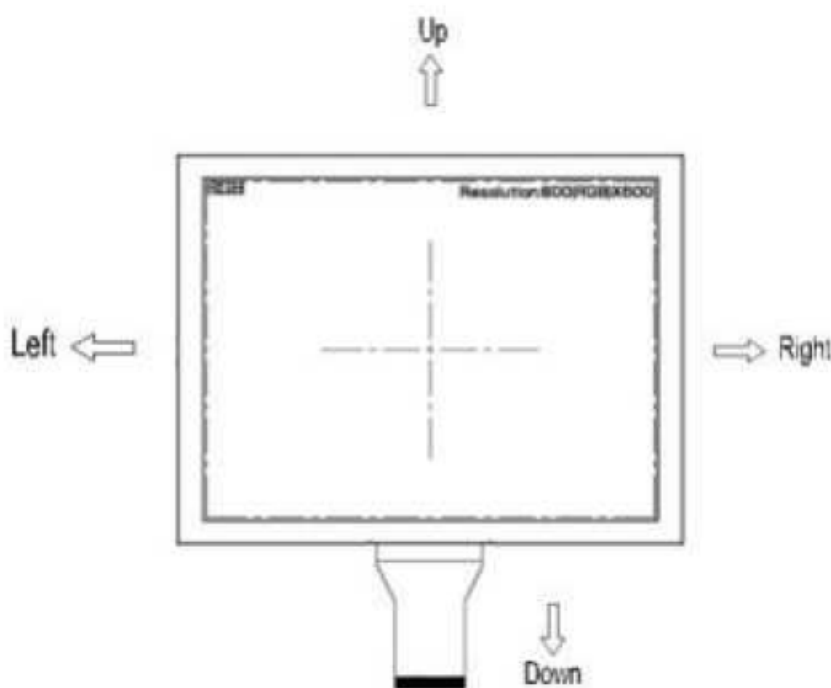


32	LED-	LED Cathode
33	L/R	Source Right or Left sequence control. Normally pull high. L/R = "L", shift left: last data = S1←S2←S3.....←S1200 = first data. L/R = "H", shift right: first data = S1→S2→S3.....→S1200 = last data
34	U/D	Gate Up or Down scan control. Normally pull low. UPDN = "L", STV2 output vertical start pulse and UD pin output logical "0" to Gate driver.(Default) UPDN = "H", STV1 output vertical start pulse and UD pin output logical "1" to Gate driver.
35	VGL	Gate OFF Voltage
36	NC	Not connection
37	NC	Not connection
38	VGH	Gate ON Voltage
39	LED+	LED Anode
40	LED+	LED Anode

SELECTION OF SCANNING MODE

SETTING OF SCAN CONTROL INPUT		SCANNING DIRECTION
U/D	L/R	
GND	DVDD	Up to down, left to right
DVDD	GND	Down to up, right to left
GND	GND	Up to down, right to left
DVDD	DVDD	Down to up, left to right

DEFINITION OF SCANNING DIRECTION REFER TO THE FIGURE AS BELOW:



Touch Panel:

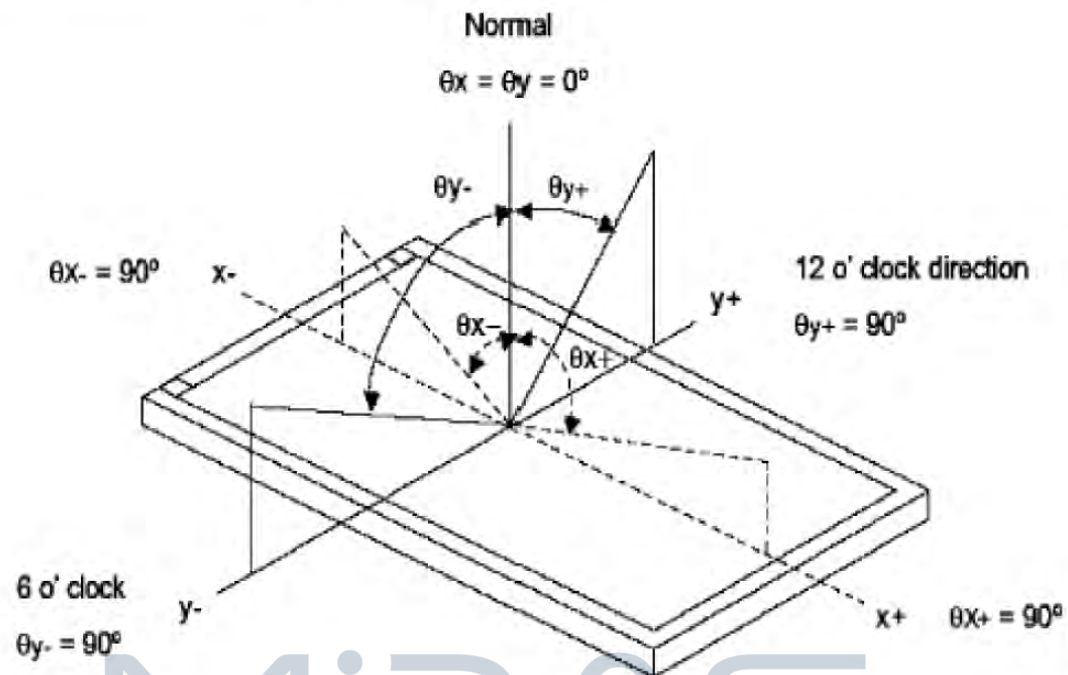
Pin No.	Symbol	Description
1	VCC	Positive power supply(3.3V)
2	GND	Negative supply
3	I2C_SCL	I2C Serial clock input/output
4	I2C_SDA	I2C Serial data input/output
5	INT	External Interrupt
6	RST	External Reset, Low is active

5. OPTICAL CHARACTERISTICS

ITEM		SYMBOL	CONDITIONS	SPECIFICATIONS			UNIT	NOTE
				MIN	TYP.	MAX		
Luminance		L			650		Cd/m ²	
Contrast ratio		CR	$\theta = 0^\circ$	500	700			
Response time	Rising	T_{R+}	$\theta = 0^\circ$		30		ms	
	Falling	T_F						
CIE COLOUR COORDINATE	RED	XR	VIEWING NORMAL ANGLE	-0.015		+0.015		
		YR						
	GREEN	XG						
		YG						
	BLUE	XB						
		YB						
	WHITE	XW			0.309			
		YW			0.326			
VIEWING ANGLE	Hor.	θ_{x+}	$CR \geq 10$	65	75		Degree	
		θ_{x-}		65	75			
	Ver.	θ_{y+}		60	70			
		θ_{y-}		65	75			



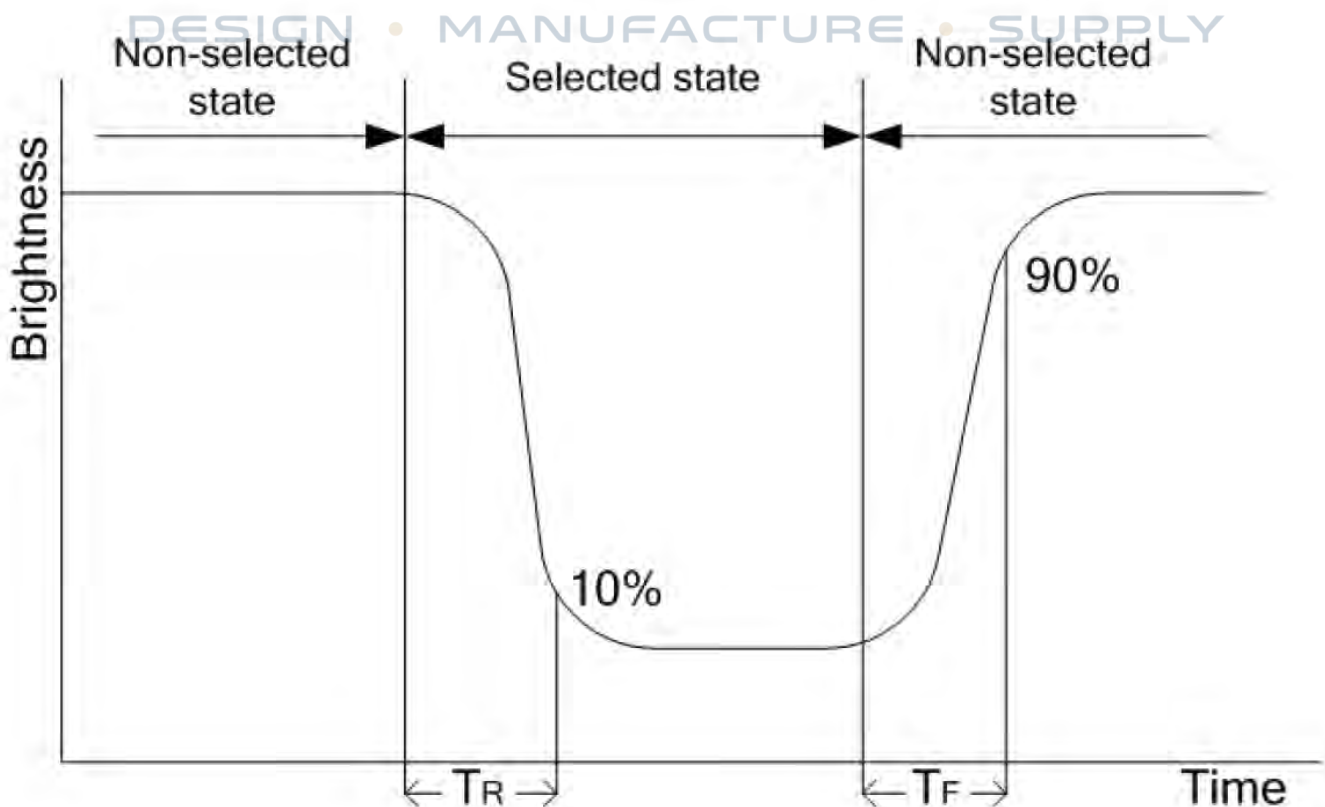
Note 1 : Definition of Viewing Angle θ_x and θ_y :



Note 2: Definition of contrast ratio CR:

$$CR = \frac{\text{Brightness of non-selected dots (white)}}{\text{Brightness of selected dots (black)}}$$

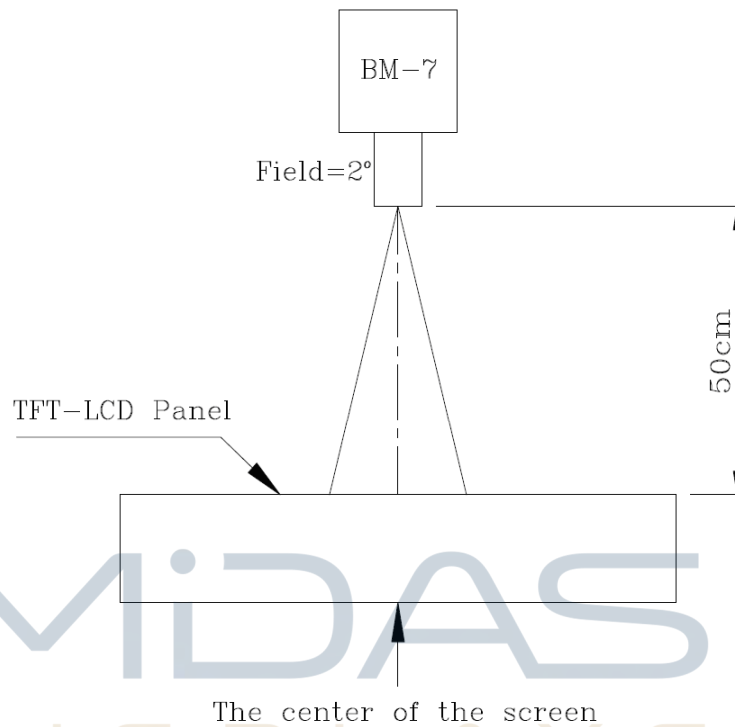
Note 3: Definition of response time (T_R , T_F)



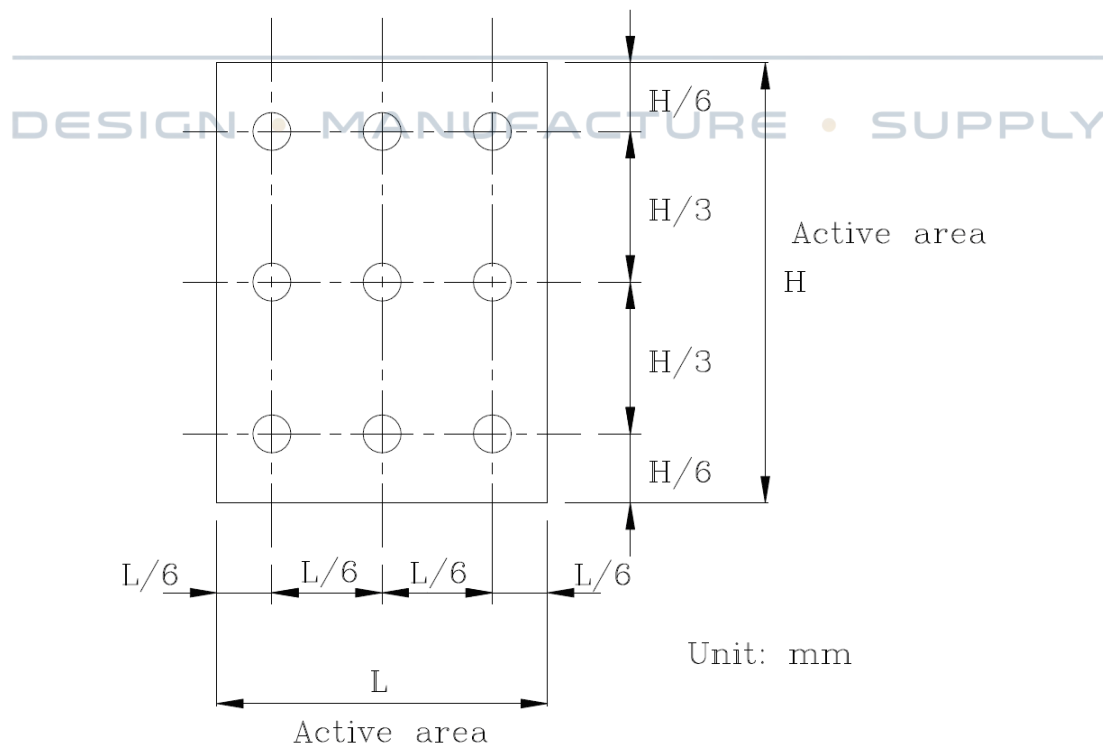
Note 4: Definition of Luminance

①The Brightness Test Equipment Setup

Field= 2° (As measuring “black” image, field= 2° is the best testing condition)



②The Brightness Test Point Setup



6. ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT
Power Supply Voltage	VDD	-0.5	3.96	V
Operating temperature	Top	-30	+80	°C
Storage temperature	Tst	-30	+85	°C

7. ELECTRICAL CHARACTERISTICS

7.1 BLACKLIGHT DRIVING CONDITIONS

ITEM	SYMBOL	SPECIFICATIONS			UNIT	REMARK
		MIN	TYP.	MAX		
Supply Voltage	Vf	13.5		16.5	V	
Supply Current	IL		360		mA	
Power consumption	P	4.86		5.94	W	
LED lifetime			50,000		Hr	

7.2 ELECTRICAL CHARACTERISTICS

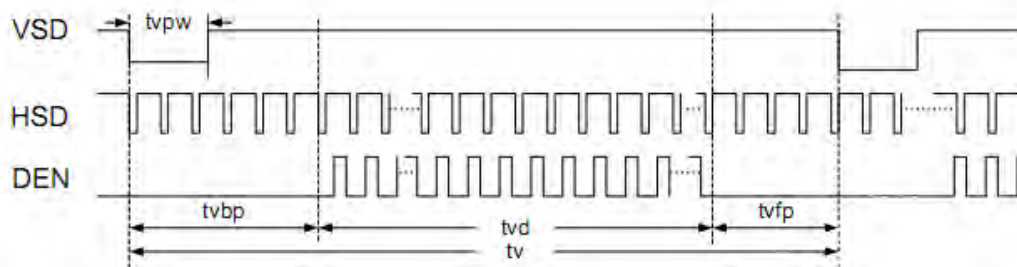
ITEM	SYMBOL	MIN	TYP.	MAX	UNIT
Power Supply	VDD	2.3	3	3.6	V
	AVDD	10.8	11	11.2	V
	VGH	16	20	24	V
	VGL	-9.8	-6.8	-3.8	V
	VCOM	3.4	3.7	4.0	V
Input voltage	Vil	0	-	0.3VDD	V
	Vih	0.7VDD	-	VDD	V



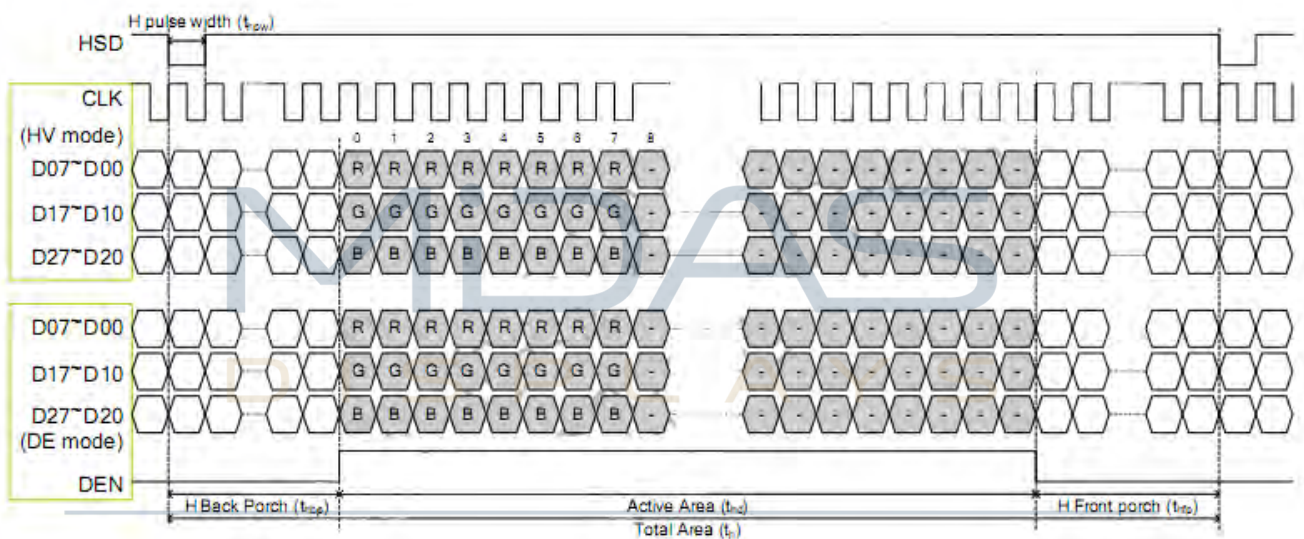
7.3 TIMING CHARACTERISTICS

7.3.1 TTL mode data input format

- Vertical timing

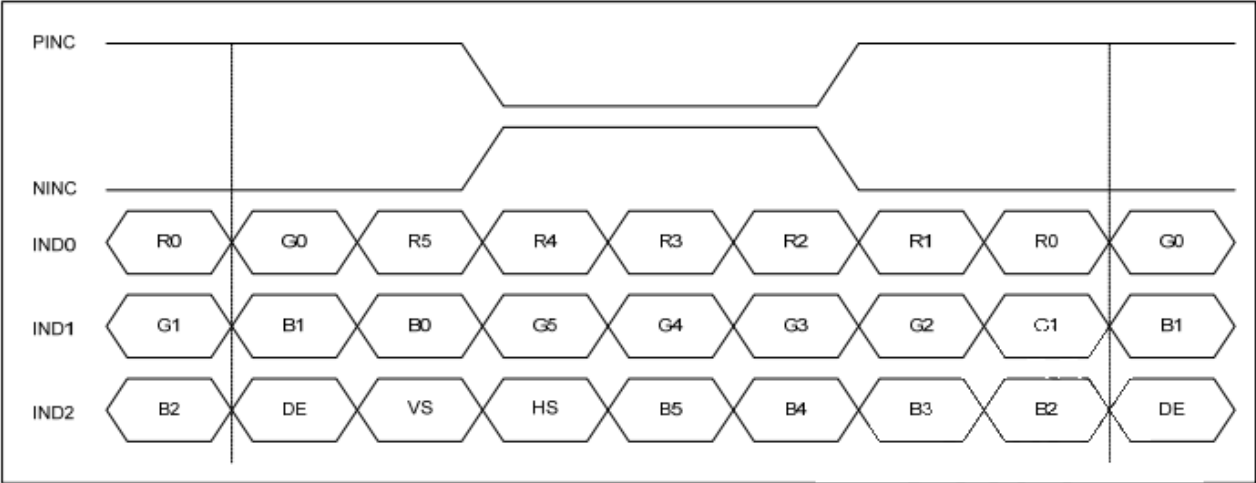


- Horizontal timing

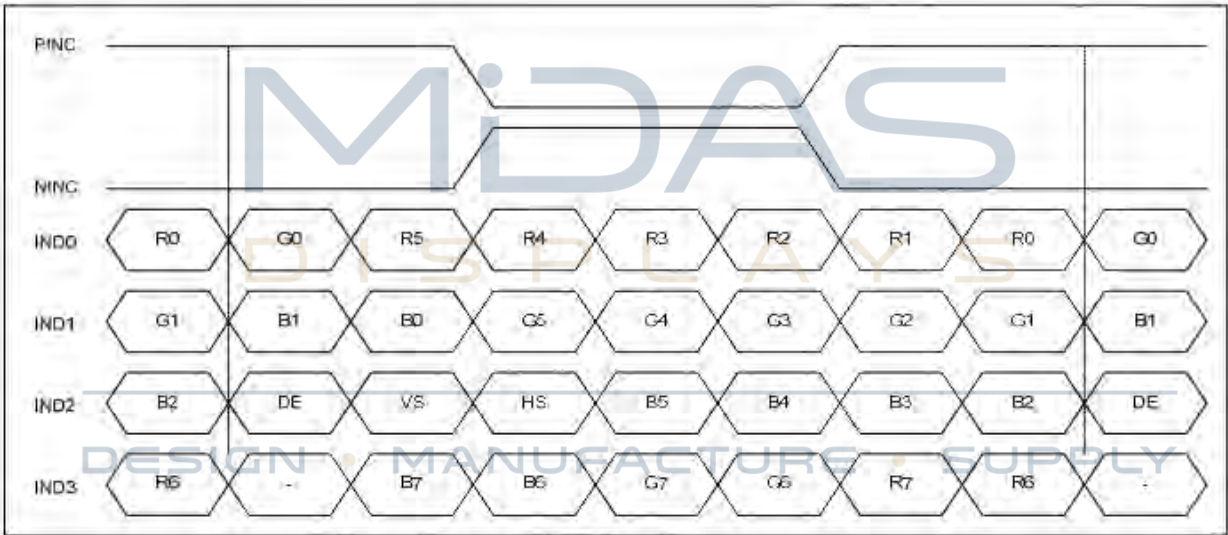


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7.3.2 LVDS mode input format



6-bit LVDS input



8-bit LVDS input

8. RELIABILITY TEST

NO.	TEST ITEM	CONDITIONS
1	HIGH TEMPERATURE STORAGE	TA=85℃ 240H
2	LOW TEMPERATURE STORAGE	TA=-30℃ 240H
3	HIGH TEMPERATURE OPERATION	TA=80℃ 240H
4	LOW TEMPERATURE OPERATION	TA=-30℃ 240H
5	HIGH TEMPERATURE AND HIGH HUMIDITY OPERATION	+60℃, 90%RH 240H
6	THERMAL SHOCK	-30℃→+80℃, 0.5H:5CYCLES

9. LCD MODULES HANDLING PRECAUTIONS

- The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from a high place, etc.
- If the display panel is damaged and the liquid crystal substance inside it leaks out, do not get any in your mouth. If the substance come into contact with your skin or clothes promptly wash it off using soap and water.
- Do not apply excessive force to the display surface or the adjoining areas since this may cause the color tone to vary.
- The polarizer covering the display surface of the LCD module is soft and easily scratched. Handle this polarize carefully.
- To prevent destruction of the elements by static electricity, be careful to maintain an optimum work environment.
 - Be sure to ground the body when handling the LCD module.
 - Tools required for assembly, such as soldering irons, must be properly grounded.
 - To reduce the amount of static electricity generated, do not conduct assembly and other work under dry conditions.
 - The LCD module is coated with a film to protect the display surface. Exercise care when peeling off this protective film since static electricity may be generated.
- Storage precautions
When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps. Keep the modules in bags designed to prevent static electricity charging under low temperature / normal humidity conditions (avoid high temperature / high humidity and low temperatures below 0°C). Whenever possible, the LCD modules should be stored in the same conditions in which they were shipped from our company.

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10. OTHERS

- Liquid crystals solidify at low temperature (below the storage temperature range) leading to defective orientation of liquid crystal or the generation of air bubbles (black or white). Air bubbles may also be generated if the module is subjected to a strong shock at a low temperature.
- If the LCD modules have been operating for a long time showing the same display patterns may remain on the screen as ghost images and a slight contrast irregularity may also appear. Abnormal operating status can be resumed to be normal condition by suspending use for some time. It should be noted that this phenomena does not adversely affect performance reliability.
- To minimize the performance degradation of the LCD modules resulting from caused by static electricity, etc. exercise care to avoid holding the following sections when handling the modules:
 - Exposed area of the printed circuit board
 - Terminal electrode sections.

