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# Product Specification

Part Name: 10.1 inch TFT DISPLAY MODULE  
Customer Part ID: TLET1010N7A2-I

Ver: A

Customer:
Approved by



## 1. GENERAL DESCRIPTION

The display model **TLET1010N7A2-I** is a ALL 0 ' clock TFT-LCD (Thin Film Transistor Liquid Crystal Display) module. This model is Composed of a TFT LCD panel , a driving circuit and a back light, and also has a 10.1 inch diagonally measured active display area with FHD (1200) horizontal by 1920 vertical pixel) resolution in a stripe arrangement. Display 16.7M colors by 8 bit R.G.B signal input.

General specifications are summarized in the following table :

### 1.1 General information

Item	Specification	Unit
Outline Dimension	143×228.70×2.25 (TYP.)	mm
Display area	135.36 (H) ×216.58 (V)	mm
Number of Pixel	1200RGB (H) ×1920 (V)	pixels
Pixel pitch	0.1128 (H) ×0.1128 (V)	mm
Pixel arrangement	RGB Vertical stripe	
Display mode	IPS	
Surface treatment	AG	
Back-light	White LED	
System interface	4 lane MIPI	
NTSC	72 ( type )	%
Viewing Direction	ALL VIEW	

## 2. ABSOLUTE MAXIMUM RATINGS

### 2.1 Electrical Absolute Rating:

Item	Symbol	Min.	Type.	Max.	Unit	NOTE	
Supply Voltage	VDDIN	3.1	3.3	3.4	V		
	Iovcc	–	120	500	mA		
	AVEE	–	–	–	V		
	AVDD	–	–	–	V		
	VGH	–	–	–	V		
	VGL	–	–	–	V		
VCOM	VCOMin	–	–	–	V		
Input signal voltage	$V_{IH}$	$0.7 V_{CC}$	–	$V_{CC}$	V		
	$V_{IL}$	0	–	$0.3V_{CC}$	V		

### 2.2 Environment Absolute Rating

Item	Symbol	Min	Max	Unit	Note
Operating Temperature	$T_{OPA}$	–10	50	°C	
Storage Temperature	$T_{STG}$	–20	60	°C	

### 3. OPTICAL CHARACTERISTICS

#### 3.1 Optical specification

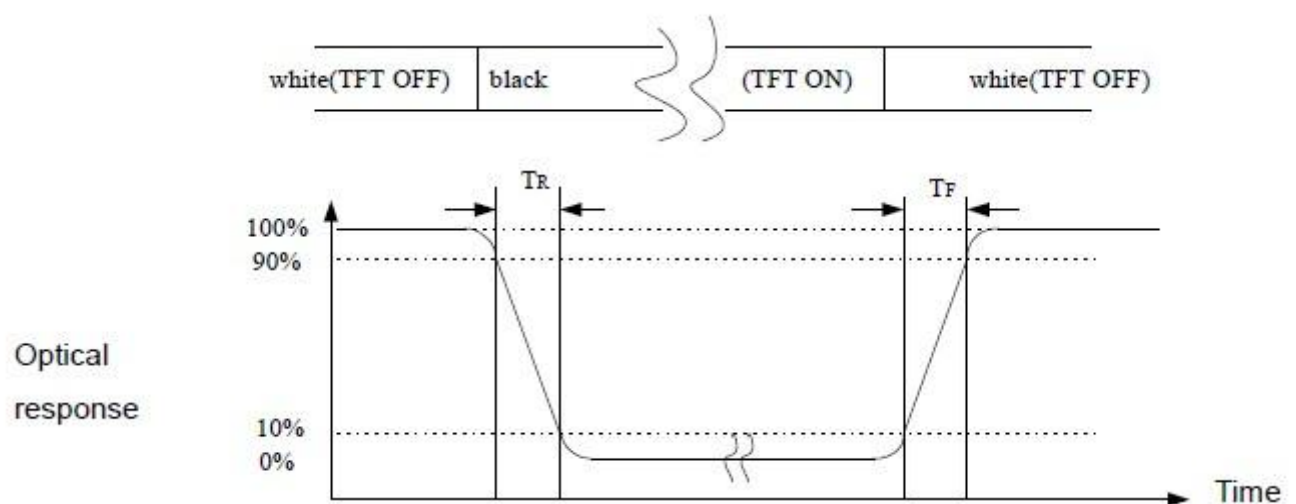
ITEM	SYMBOL	CONDITIONS	SPECIFICATIONS			UNIT	NOTE	
			MIN.	TYP.	MAX.			
Brightness	B	Viewing normal angle	270	300	—	Cd/m <sup>2</sup>	(1) (2) (3) (4) (5)	
Contrast Ratio	CR		800	1000	—	—		
color temperature	CT		—	—	—	—		
Response Time	Tr+Tf		—	35	45	msec		
CIE Color coordinate	White		XW	Typ:- 0.03	0.300	Typ:+ 0.03		
			YW		0.327			
	Red		XR		0.662			
			YR		0.317			
	Green		XG		0.237			
			YG		0.577			
	Blue	XB	0.139					
		YB	0.108					
Viewing Angle	Hor.	LEFT	75	85	—	Deg.		
		RIGHT	75	85	—			
	Ver.	UP	75	85	—			
		DOWN	75	85	—			
Uniformity	Un		—	80	—	%		



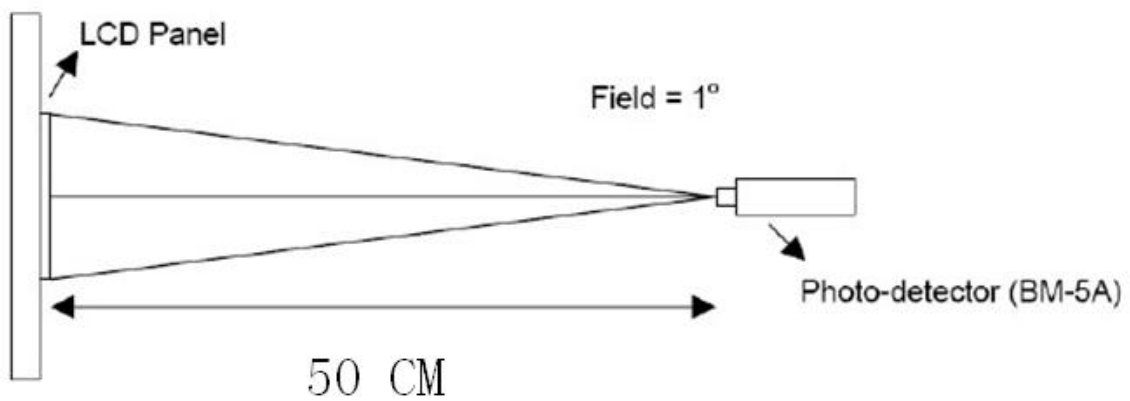
**Note (2)** Definition of Contrast Ratio (CR):  
Measured at the center point of panel

$$\text{CR} = \frac{\text{Luminance with all pixels white}}{\text{Luminance with all pixels black}}$$

**Note (3)** Definition of Response Time:



**Note (4)** Definition of optical measurement setup

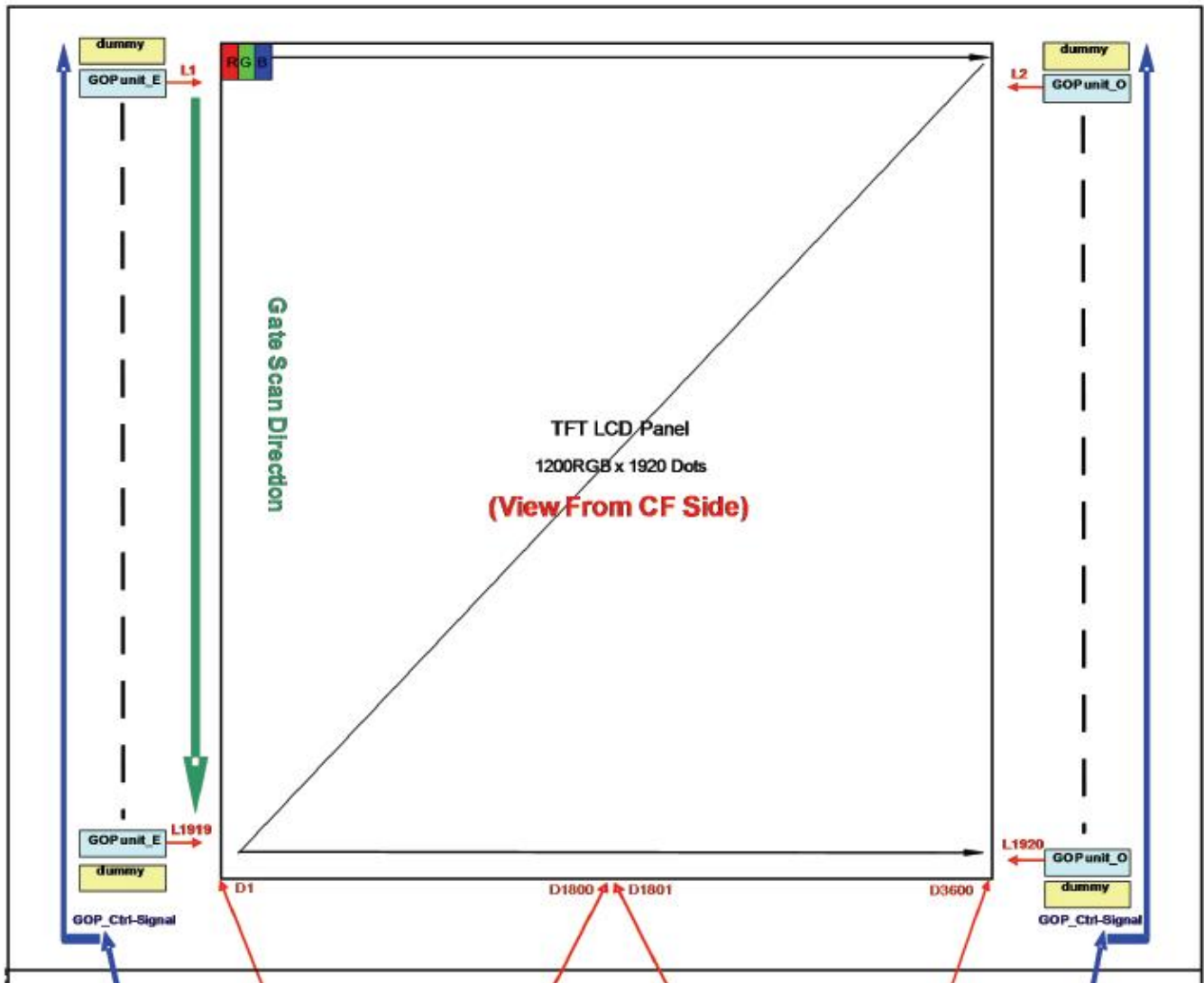


**Note (5)** Rubbing Direction (The different Rubbing Direction will cause the different optimal view direction.)



## 4. BLOCK DIAGRAM

### 4.1 Pixel Format



## 5. INTERFACE PIN CONNECTION

PIN NO	SYMBOL	Description
1	NC	OPEN
2-3	VDDIN	Power SUPPLY 3.3V
4	GND	Ground
5	RESET	Global reset signal, =VDDIN
6	NC	OPEN
7	GND	Ground
8	MIPI_TDNO	MIPI data input.
9	MIPI_TDPO	MIPI data input.
10	GND	Ground
11	MIPI_TDN1	MIPI data input.
12	MIPI_TDP1	MIPI data input.
13	GND	Ground
14	MIPI_TCN	MIPI clock input.
15	MIPI_TCP	MIPI clock input.
16	GND	Ground
17	MIPI_TDN2	MIPI data input.
18	MIPI_TDP2	MIPI data input.
19	GND	Ground
20	MIPI_TDN3	MIPI data input.
21	MIPI_TDP3	MIPI data input.
22	GND	Ground
23-24	NC	OPEN
25	GND	Ground
26	NC	OPEN
27	CABC	PWM control signal for LED driver
28-29	NC	OPEN
30	GND	Ground
31-32	LEDK	LED Cathode
33-38	NC	OPEN
39-40	LEDA	LED Anode

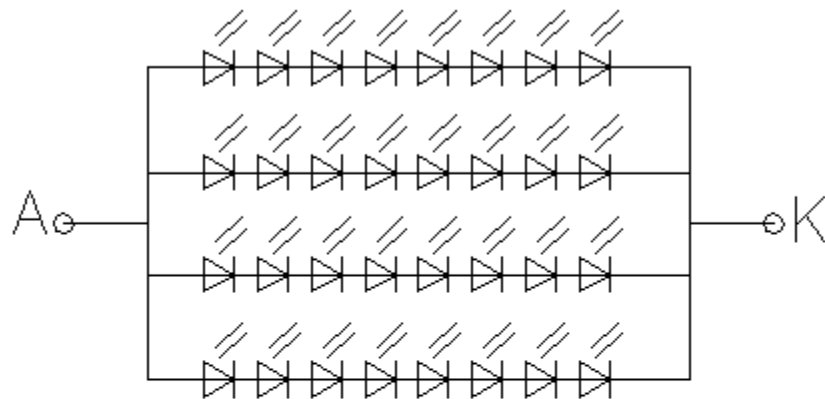
## 6. BACK LIGHT

### 6.1 The Characteristic Of The Back Light

The back-light system is an edge-lighting type with 32 LEDs.  
The characteristic of the LED is shown in the following tables.

Item	Symbol	Min	Typ.	Max.	Unit	Note
LED current	IF	-	90	92	mA	-
LED voltage	V	-	25.6	-	V	-
Brightness Uniformity	Iv-m	-	80	-	-	-
Backlight lifetime	T	-	15000	-	hrs	25 °C

### 6.2 Back Light Circuit



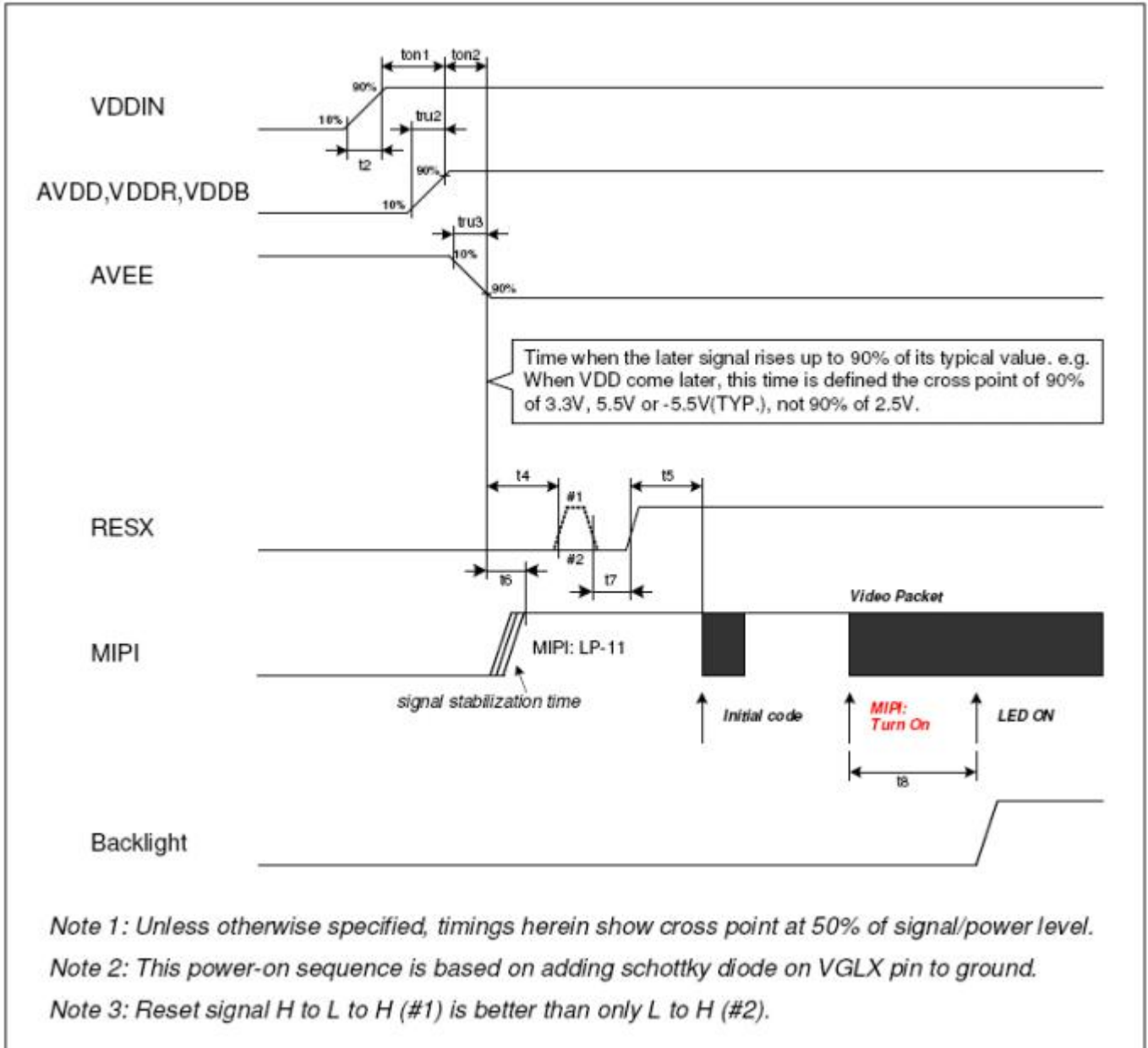
背光电路图

Backlight LED Circuit  
If=90mA; Vf=23.2–25.6V



# 8. Power 、 Signal Sequence

## POWER ON



# POWER OFF

