

Shenzhen Amelin Electronic Technology Co.,Ltd	Doc.No.: AML101FDJI4001	
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PRODUCT SPECIFICATION

TFT-LCD MODULE

Model No: AML101FDJI4001

For Customer's Acceptance	
Approved by	Comment

	Signature	Date
Prepared by		
Checked by		
Approved by		

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1. GENERAL DESCRIPTION

The display model AML101FDJI4001 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	
Power Consumption	TBD	mW

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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	45	°C	
Storage Temperature	T _{STG}	-20	60	°C	

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3. OPTICAL CHARACTERISTICS

3.1 Optical specification

ITEM	SYMBOL	CONDITIONS	SPECIFICATIONS			UNIT	NOTE	
			MIN.	TYP.	MAX.			
Brightness	B	Viewing normal angle	-	250	-	Cd/m ²	(1)(2) (3)(4)(5)	
Contrast Ratio	CR		800	1000	--	--		
color temperature	CT		--	--	--	--		
Response Time	Tr		--	15	20	msec		
	Tf		--	20	25	msec		
CIE Color coordinate	White		XW	0.280	0.300	0.320		
			YW	0.307	0.327	0.347		
	Red		XR	0.642	0.662	0.682		
			YR	0.297	0.317	0.337		
	Green		XG	0.246	0.266	0.286		
		YG	0.557	0.577	0.597			
	Blue	XB	0.119	0.139	0.159			
		YB	0.063	0.083	0.103			
Viewing Angle	Hor.	LEFT	75	85	--	Deg.		
		RIGHT	75	85	--			
	Ver.	UP	75	85	--			
		DOWN	75	85	--			
Uniformity	Un		--	80	--	%		

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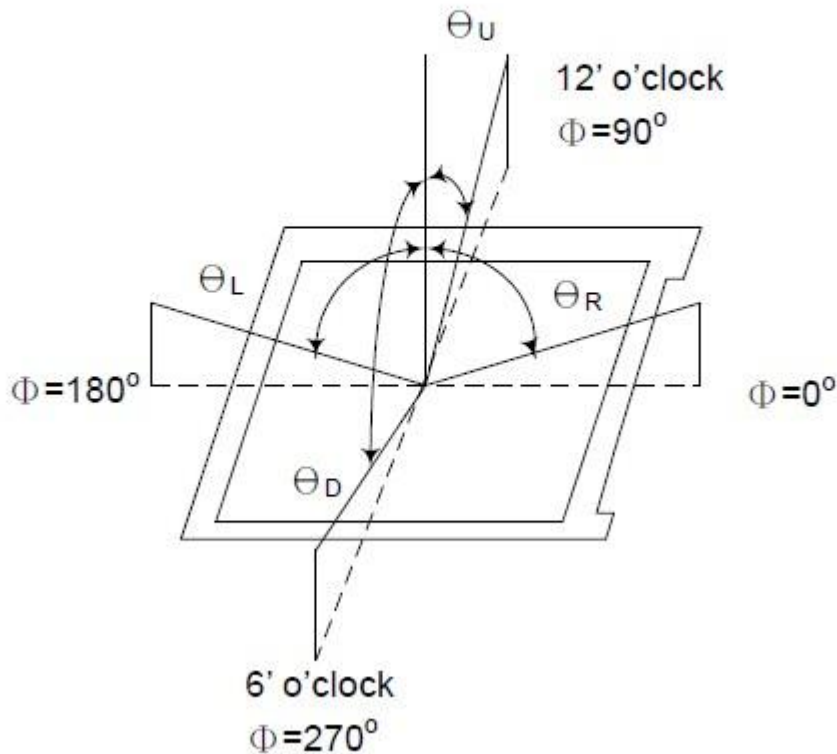
3.2 Measuring Condition

- A Measuring surrounding: dark room
- B Ambient temperature: 25+/-2 °C

3.3 Measuring Equipment

- A FPM520 of Westar Display technologies, INC., which utilized Sr-3 for Chromaticity and BM-5A for other optical characteristics.
- B Measuring spot size: 20-21 mm

Note (1) Definition of Viewing Angle :

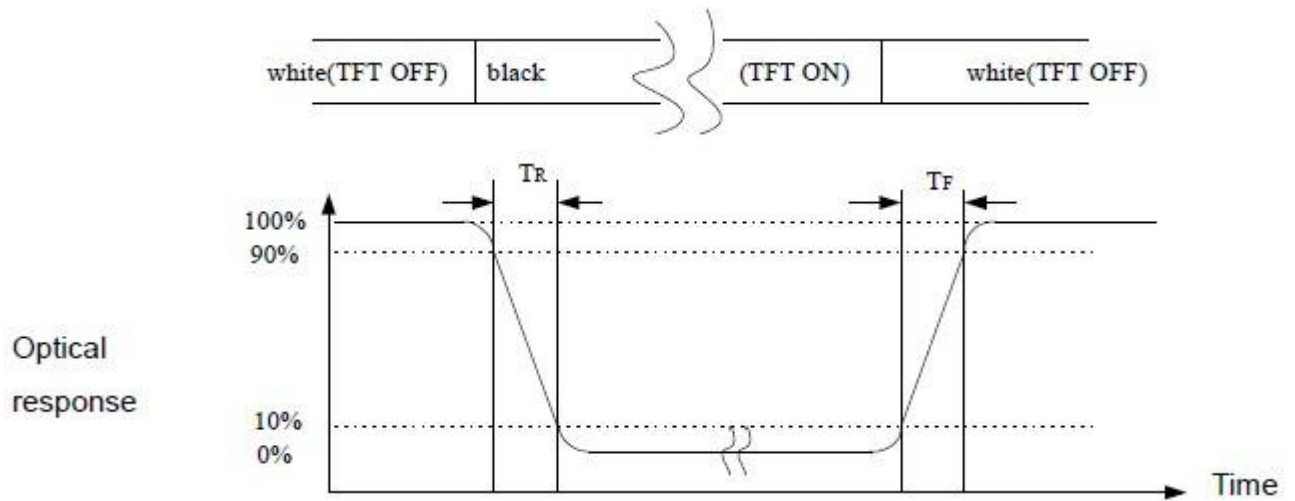


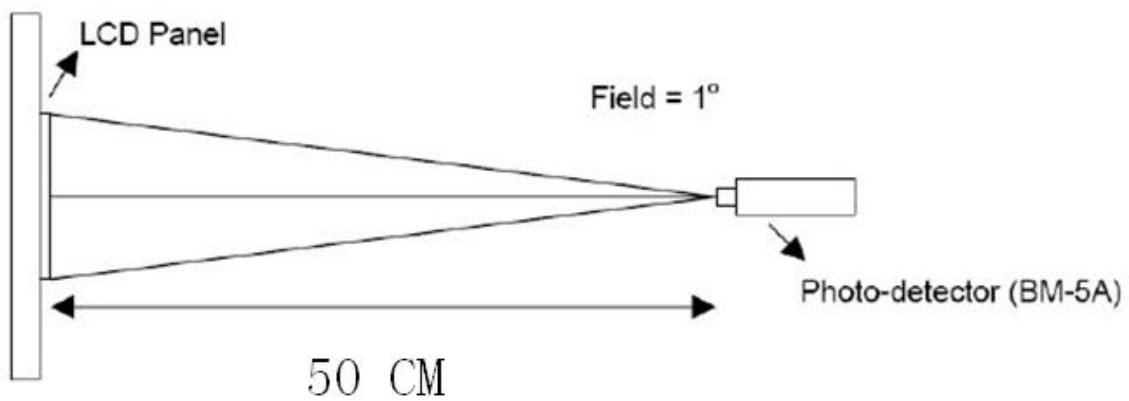
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Note (2) Definition of Contrast Ratio (CR):
Measured at the center point of panel

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

Note (3) Definition of Response Time: Sum of T_R and T_F

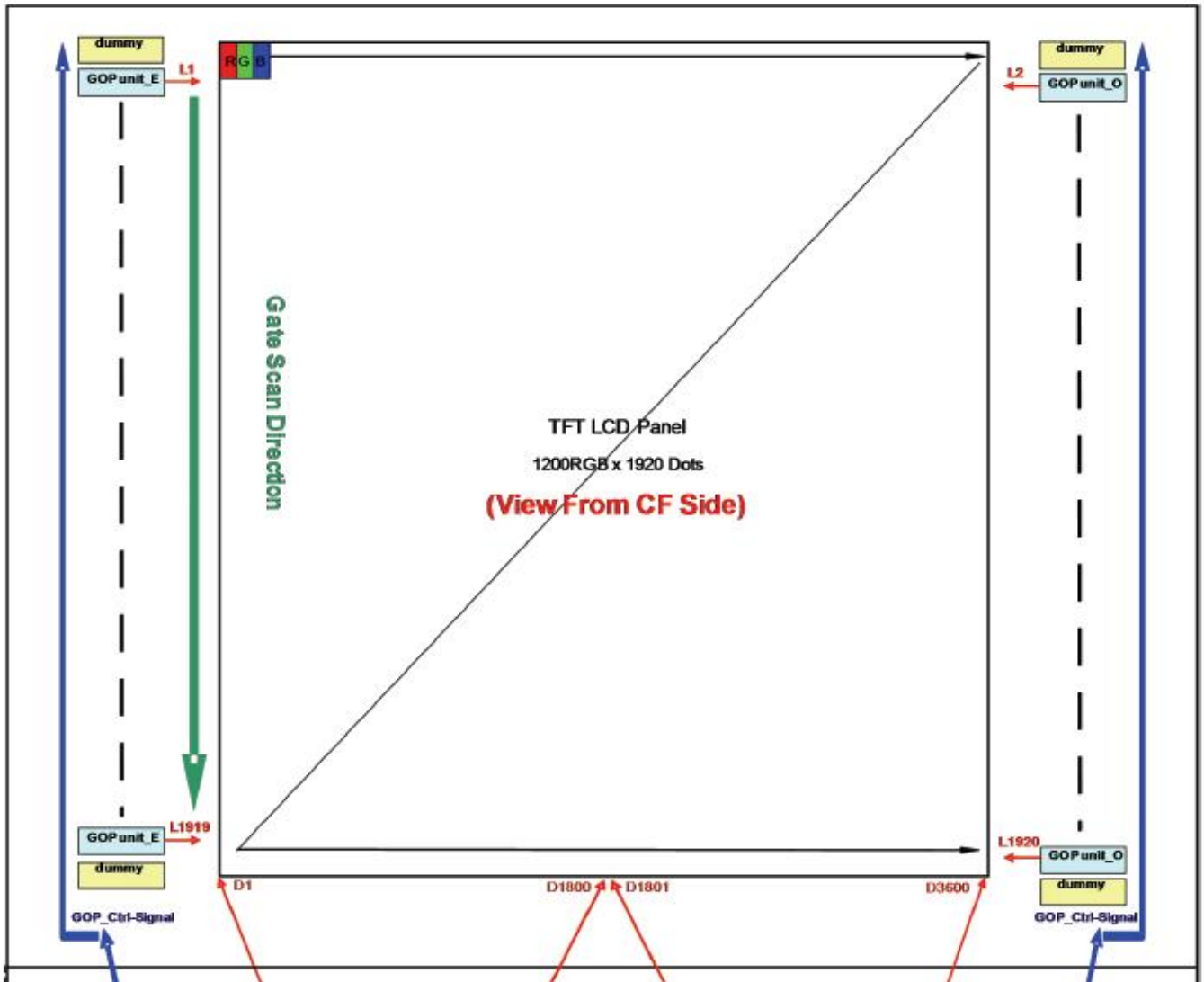


Note (4) Definition of optical measurement setup

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

4. BLOCK DIAGRAM

4.1 Pixel Format



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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

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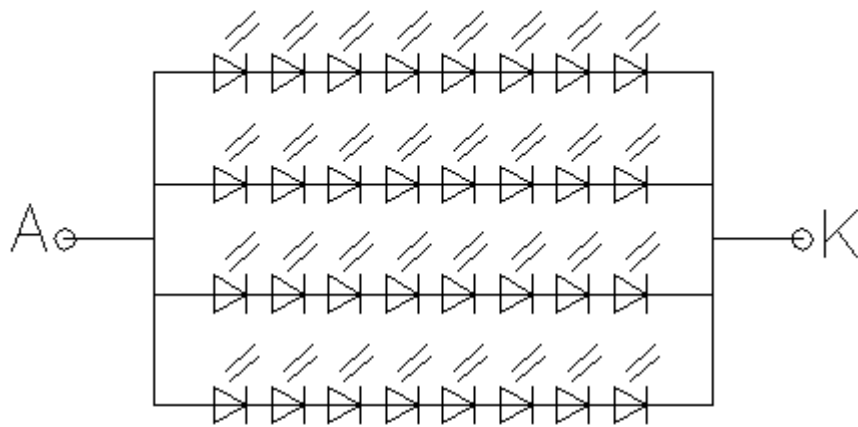
6. BACK LIGHT

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

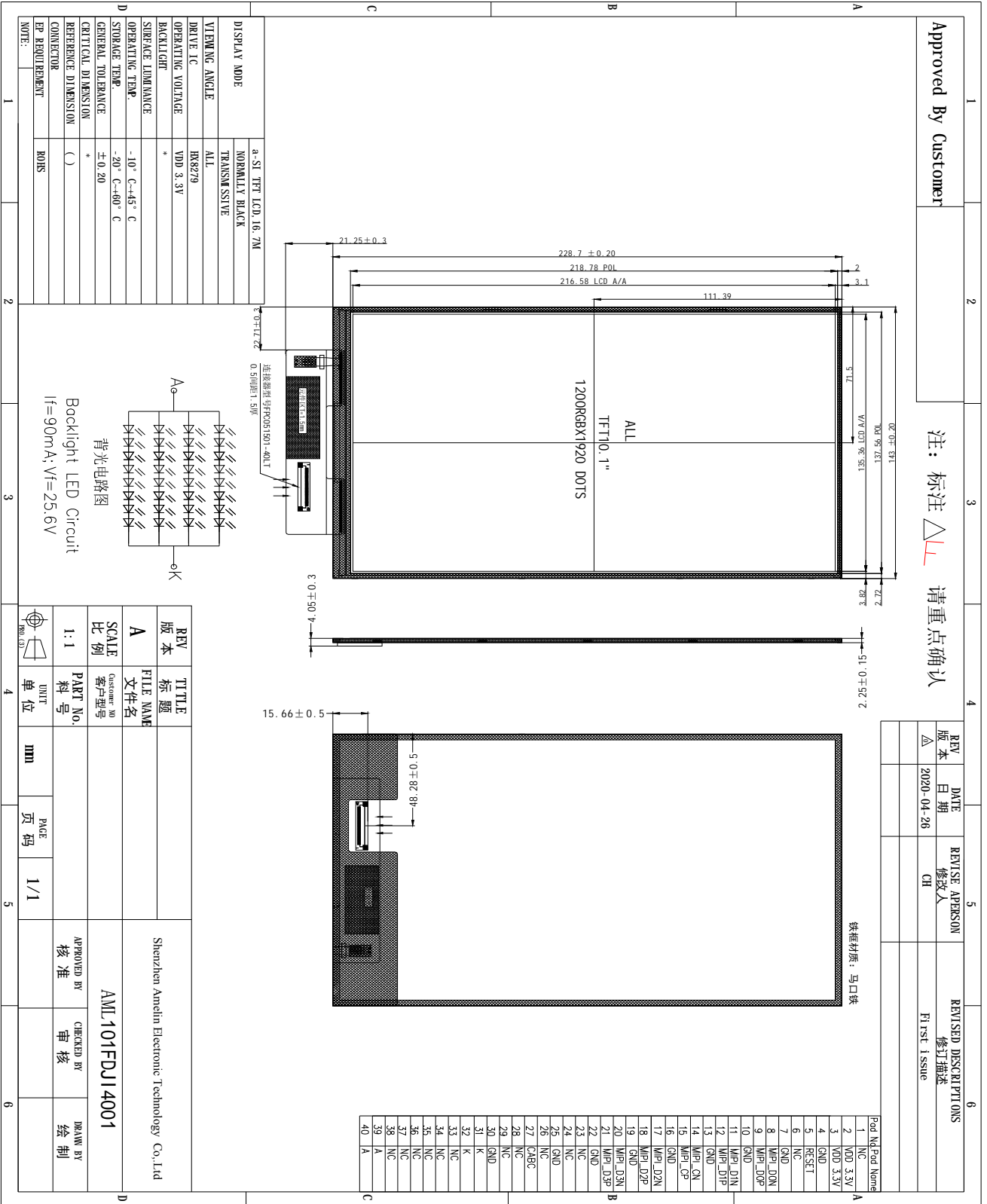
Backlight LED Circuit
 $I_f = 90\text{mA}$; $V_f = 25.6\text{V}$

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7. OUTLINE DIMENSION

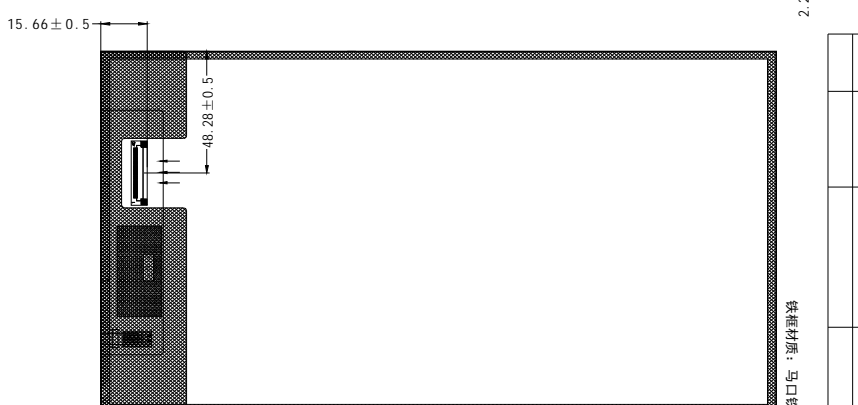
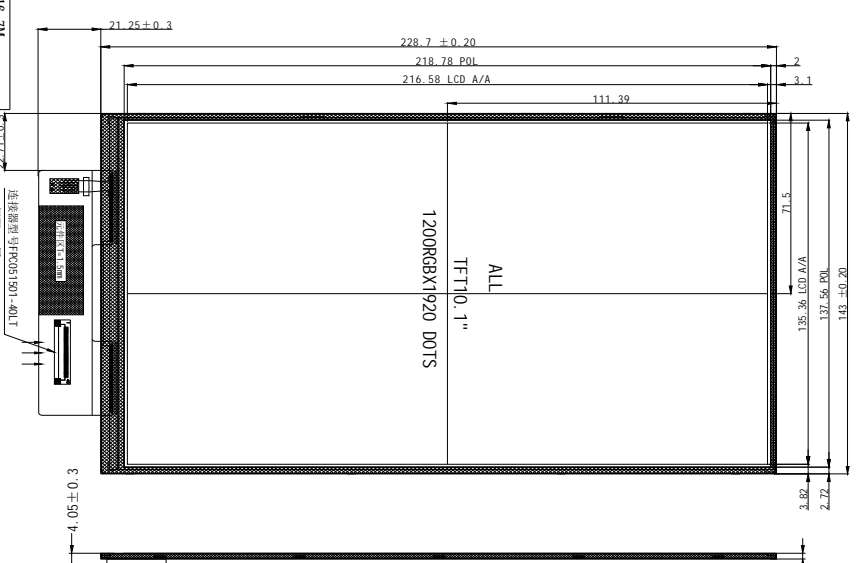


Approved By Customer

注: 标注 请重点确认

REVISED DESCRIPTIONS

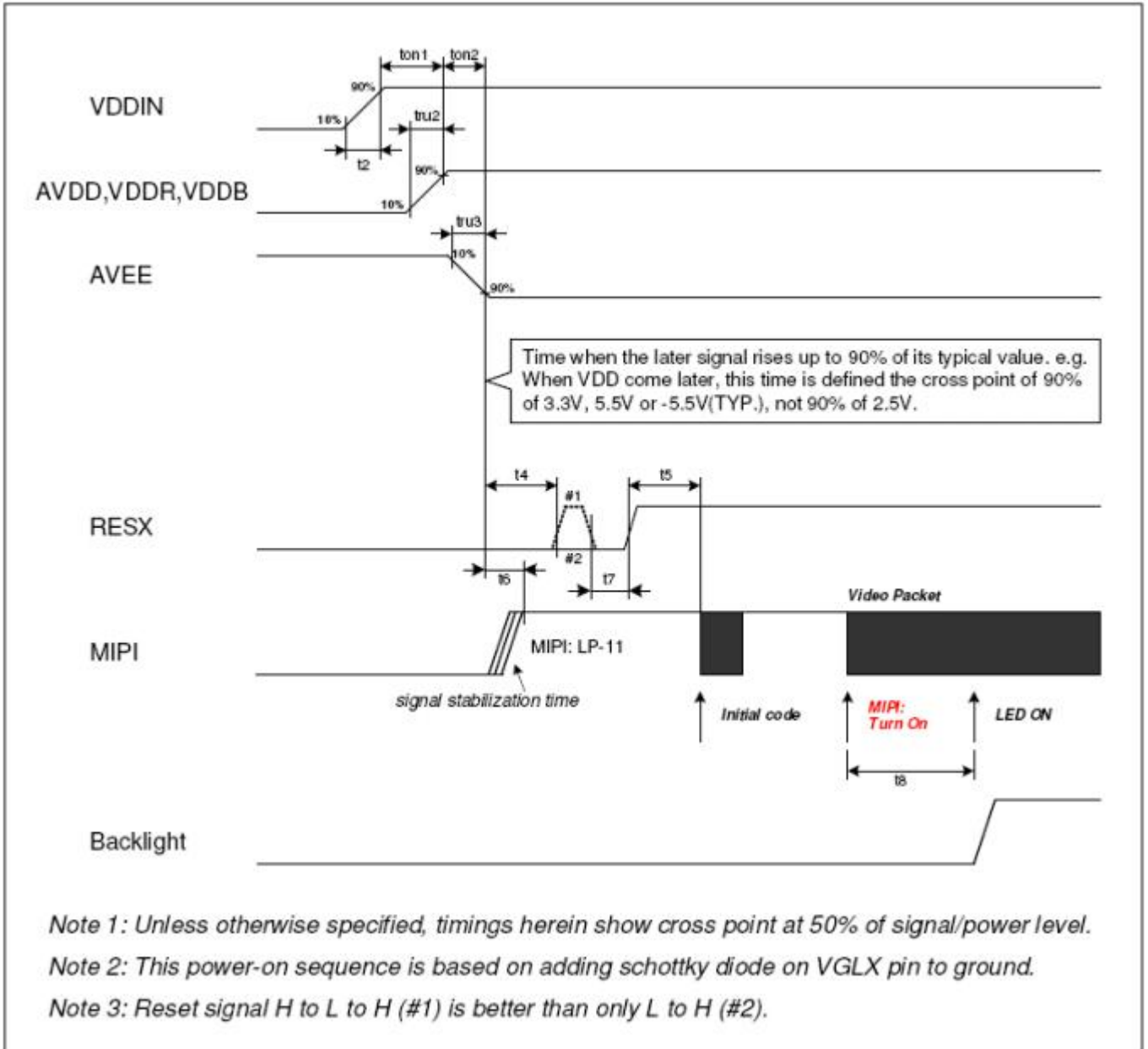
DISPLAY MODE	DISPLAY MODE
a-SI TFT LCD, 16: 7M	NORMALLY BLACK
TRANSMISSIVE	ALL
VIEWING ANGLE	ALL
DRIVE IC	HR8719
OPERATING VOLTAGE	VDD 3.3V
BACKLIGHT	*
SURFACE LUMINANCE	-10° C-+45° C
OPERATING TEMP.	-20° C-+60° C
STORAGE TEMP.	±0.20
GENERAL TOLERANCE	()
CRITICAL DIMENSION	BOIS
CONNECTOR	BOIS
PP REQUIREMENT	



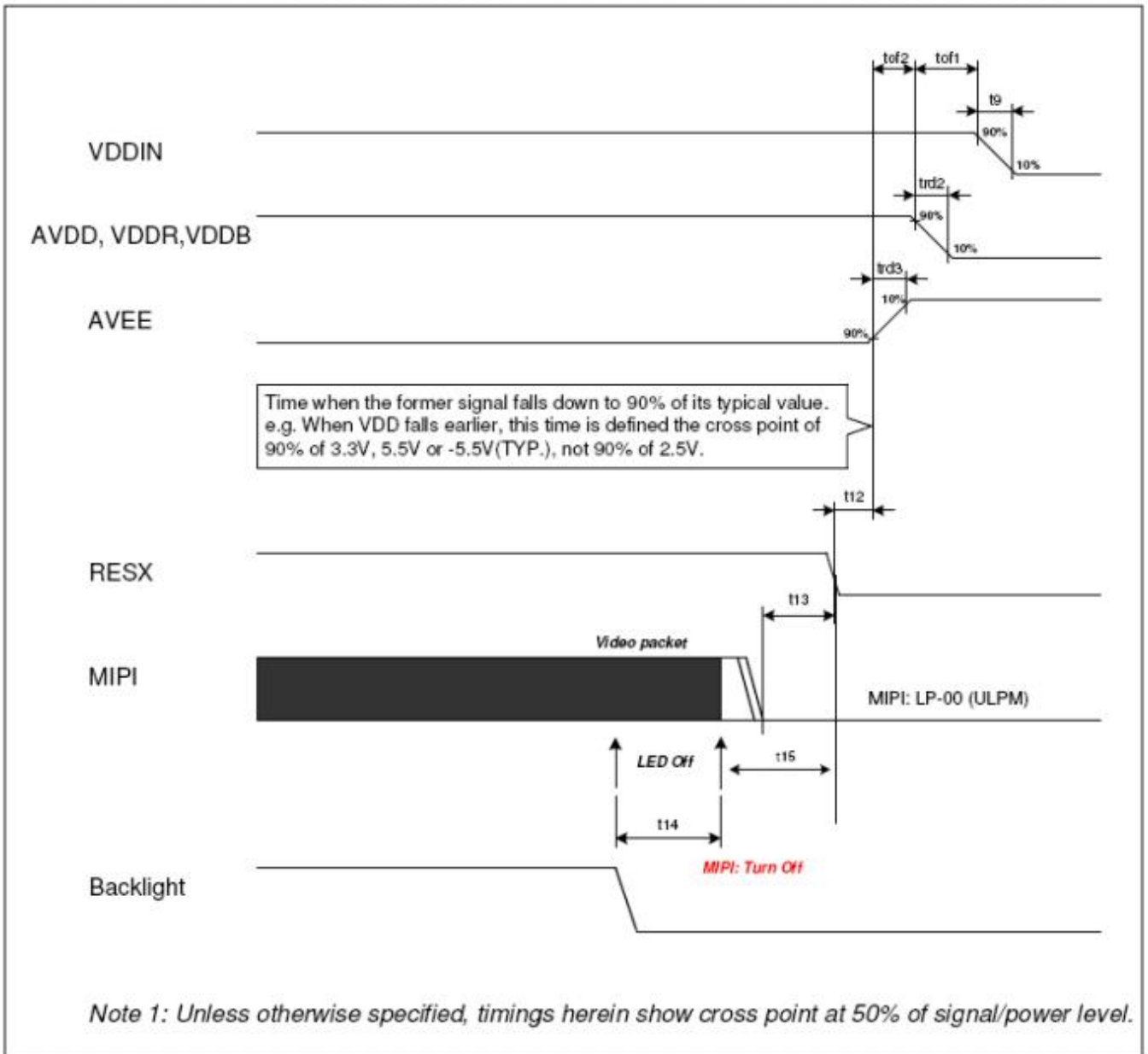
Pod No	Pod Name
1	NC
2	VDD 3.3V
3	VDD 3.3V
4	GND
5	RESET
6	NC
7	NC
8	MPI_D0N
9	MPI_D0P
10	GND
11	MPI_D1N
12	MPI_D1P
13	GND
14	MPI_CN
15	MPI_CP
16	GND
17	MPI_D2N
18	MPI_D2P
19	GND
20	MPI_D3N
21	MPI_D3P
22	GND
23	NC
24	NC
25	GND
26	NC
27	CE9C
28	NC
29	NC
30	GND
31	K
32	K
33	NC
34	NC
35	NC
36	NC
37	NC
38	NC
39	A
40	A

8. Power、Signal Sequence

POWER ON



POWER OFF



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9. Timing Characteristics of Input Signals

Signal	Item	Symbol	Min.	Typ.	Max.	Unit
	MIPI Data frequency	FDATA	955	999	1000	MHz
DCLK	Frequency	1/Tc	-	159.4	-	MHz
DE	Vertical Total Time	TV	1981	1981	1982	TH
	Vertical Active Display Period	TVD	-	1920	-	TH
	Vertical Front Porch Period	TVFP	35	35	36	TH
	Vsync pulse width	TVPW	1	1	1	TH
	Vertical Back Porch Period	TVBP		25		TH
	Horizontal Total Time	TH	1275	1341	1342	Tc
	Horizontal Active Display Period	THD	-	1200	-	Tc
	Horizontal Front Porch Period	THFP	42	80	81	Tc
	Horizontal pulse width	THPW	1	1	1	Tc
	Horizontal Back Porch Period	THBP	32	60	60	Tc

