

PRODUCT SPECIFICATION **FOR LCD MODULE**

Revision: 1.0

Model No: LSC1163I01-E-V1

Module Type: COG+FPC+B/L+CTP

APPROVED SIGNATURE

- ☒ Approved Product Specification only
- ☐ Approved Product Specification and Samples

<u>Prepared By</u>	<u>Checked By</u>	<u>Approved By</u>

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1. GENERAL DESCRIPTION

The display model LSC1163I01-E-V1 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 11.6 inch diagonally measured active display area with WSVGA(1920 horizontal by 1080 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	270.92×164.28×4.80 (Type.)	mm
Display area	256.32(H)×144.18(V)	mm
Number of Pixel	1920RGB(H)×1080(V)	pixels
Pixel pitch	0.1335(H)×0.1335(V)	mm
Pixel arrangement	RGB Vertical stripe	
Display mode	IPS	
Surface treatment	AG25%	
Back-light	White LED	
System interface	eDP 1.2	
NTSC	72 (type)	%
Viewing Direction	ALL VIEW	
Power Consumption	TBD	mW

2. ABSOLUTE MAXIMUM RATINGS

2.1 Electrical Absolute Rating:

Item	Symbol	Min.	Type.	Max.	Unit	NOTE
Supply Voltage	VDD	3.1	3.3	3.4	V	
	AVEE	-	-	-	V	
	AVDD	-	-	-	V	
	VBL	7	12	21	V	
	调整对比度，调大颜色变深，调小颜色变浅					
	VGH	-	-	-	V	
	VGL	-	-	-	V	
VCOM	VCOMin	-	-	-	V	
	TYPE VCOM 电压值只做参考，具体以实际效果为准（根据 FLICKER 状态可调整），IPS 屏，调 VCOM 可以解决残影					
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}	0	45	°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		220		Cd/m ²	(1)(2) (3)(4)(5)
Contrast Ratio		CR		800	1000	--	--	
colo(u)r temperature		CT		--	--	--	--	
Response Time		Tr+Tf		--	30	35	msec	
CIE Color coordinate	Whit e	XW		TBD	TBD	TBD		
		YW		TBD	TBD	TBD		
	Red	XR		TBD	TBD	TBD		
		YR		TBD	TBD	TBD		
	Gree n	XG		TBD	TBD	TBD		
		YG		TBD	TBD	TBD		
	Blue	XB		TBD	TBD	TBD		
		YB		TBD	TBD	TBD		
Viewi ng Angle	Hor .	LEFT	Center CR>=10	--	85	--	Deg .	
		RIGHT		--	85	--		
	Ver .	UP		--	85	--		
		DOWN		--	85	--		
Unifo rmity	Un			--	75	--	%	

3.2 Measuring Condition

A Measuring surrounding:dark room

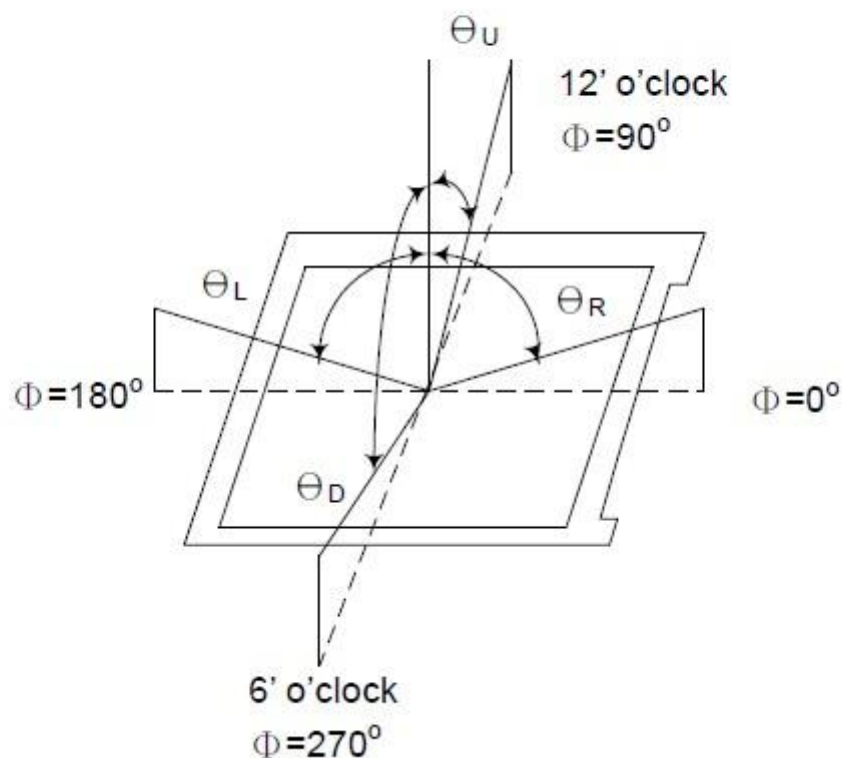
B Ambient temperature: 25+/-2 °C

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

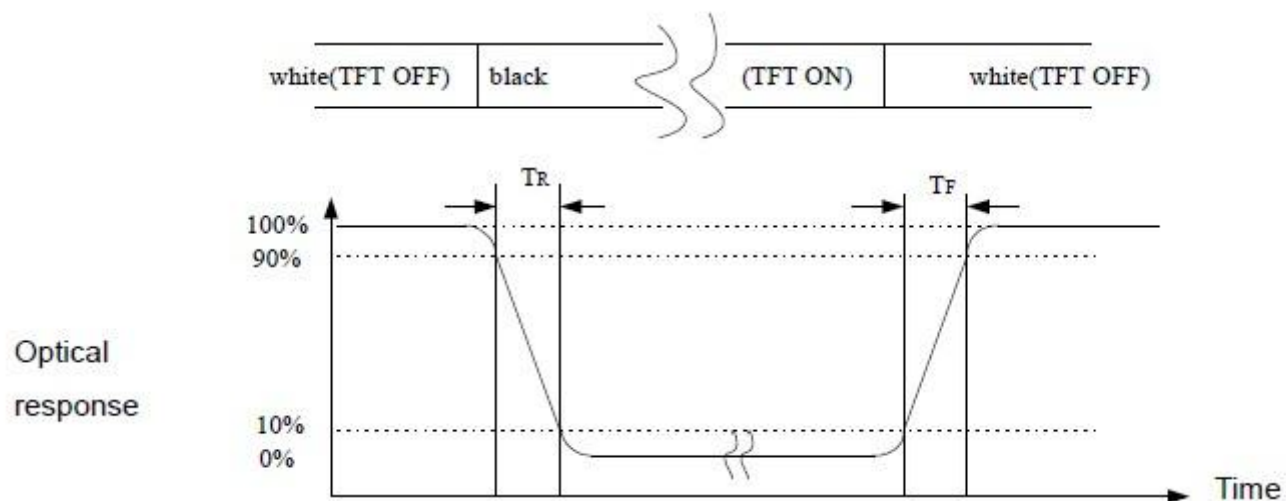
Note (1) Definition of Viewing Angle :



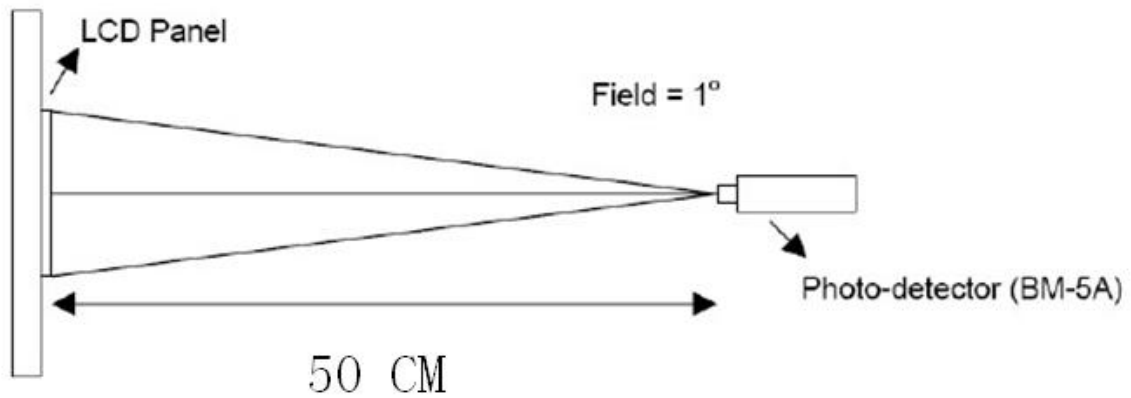
Note (2) Definition of Contrast Ratio (CR):
Measured at the center point of panel

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

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



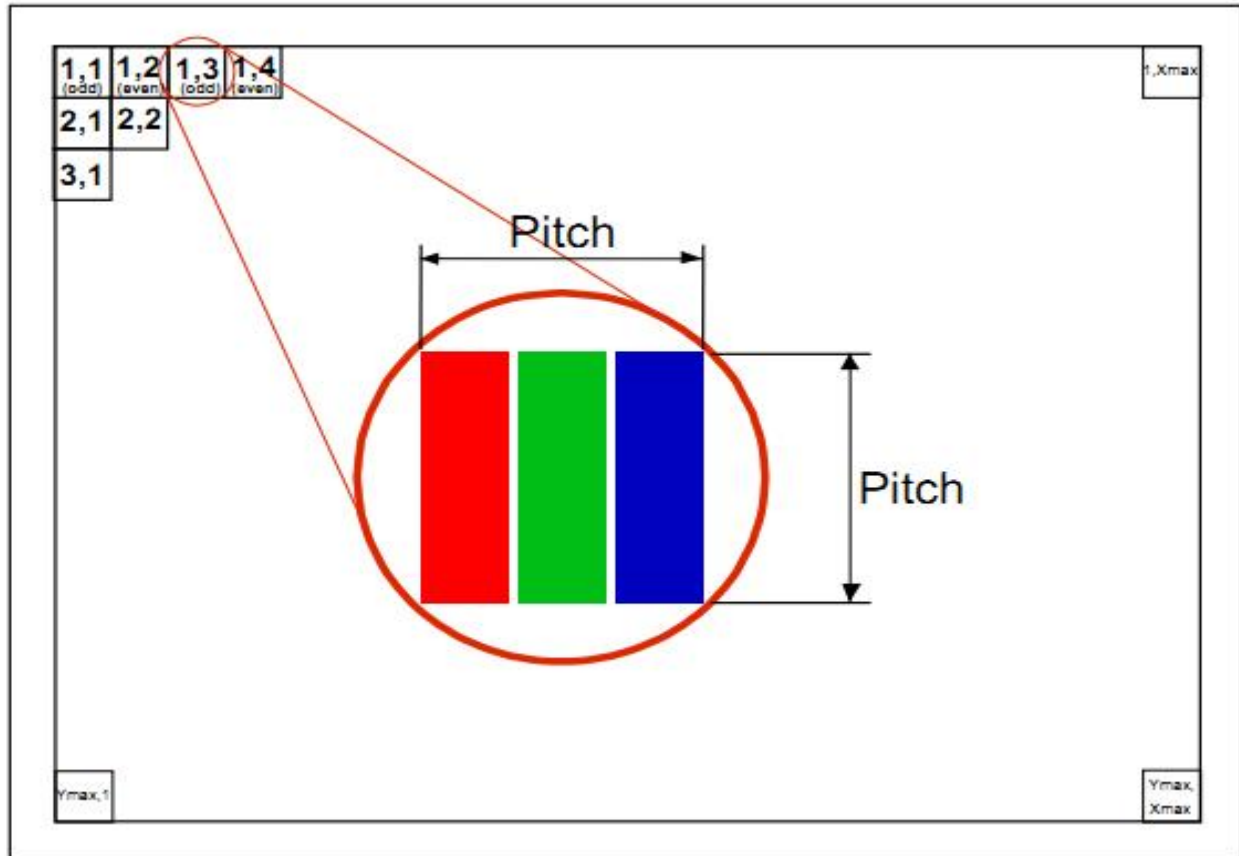
Note (4) Definition of optical measurement setup



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

4. BLOCK DIAGRAM

4.1 Pixel Format



5. INTERFACE PIN CONNECTION

PIN NO	SYMBOL	Description
1	NC	OPEN
2	H_GND	High Speed Ground
3	LANE1_N	Complement Signal Link Lane 1
4	LANE1_P	True Signal Link Lane 1
5	H_GND	High Speed Ground
6	LANE0_N	Complement Signal Link Lane 0
7	LANE0_P	True Signal Link Lane 0
8	H_GND	High Speed Ground
9	AUX_CH_P	True Signal Auxiliary Channel
10	AUX_CH_N	Complement Signal Auxiliary Channel
11	H_GND	High Speed Ground
12-13	LCD_VDD	LCD logic and driver power(3.3V)
14	NC	OPEN
15-16	LCD_GND	LCD logic and driver ground
17	HPD	HPD signal pin
18-21	BL_GND	Backlight ground
22	BL_ENABLE	Backlight ON/OFF
23	BL_PWM	System PWM
24-25	NC	OPEN
26-29	BL_PWR	Power for LED backlight (12V)
30	NC	OPEN

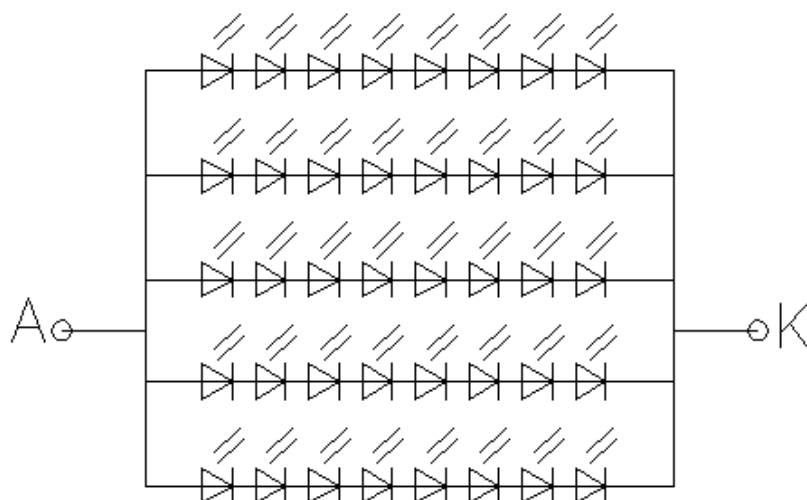
6. BACK LIGHT

6.1 The Characteristic Of The Back Light

The back-light system is an edge-lighting type with 40 LEDs.
The characteristic of the LED is shown in the following tables.

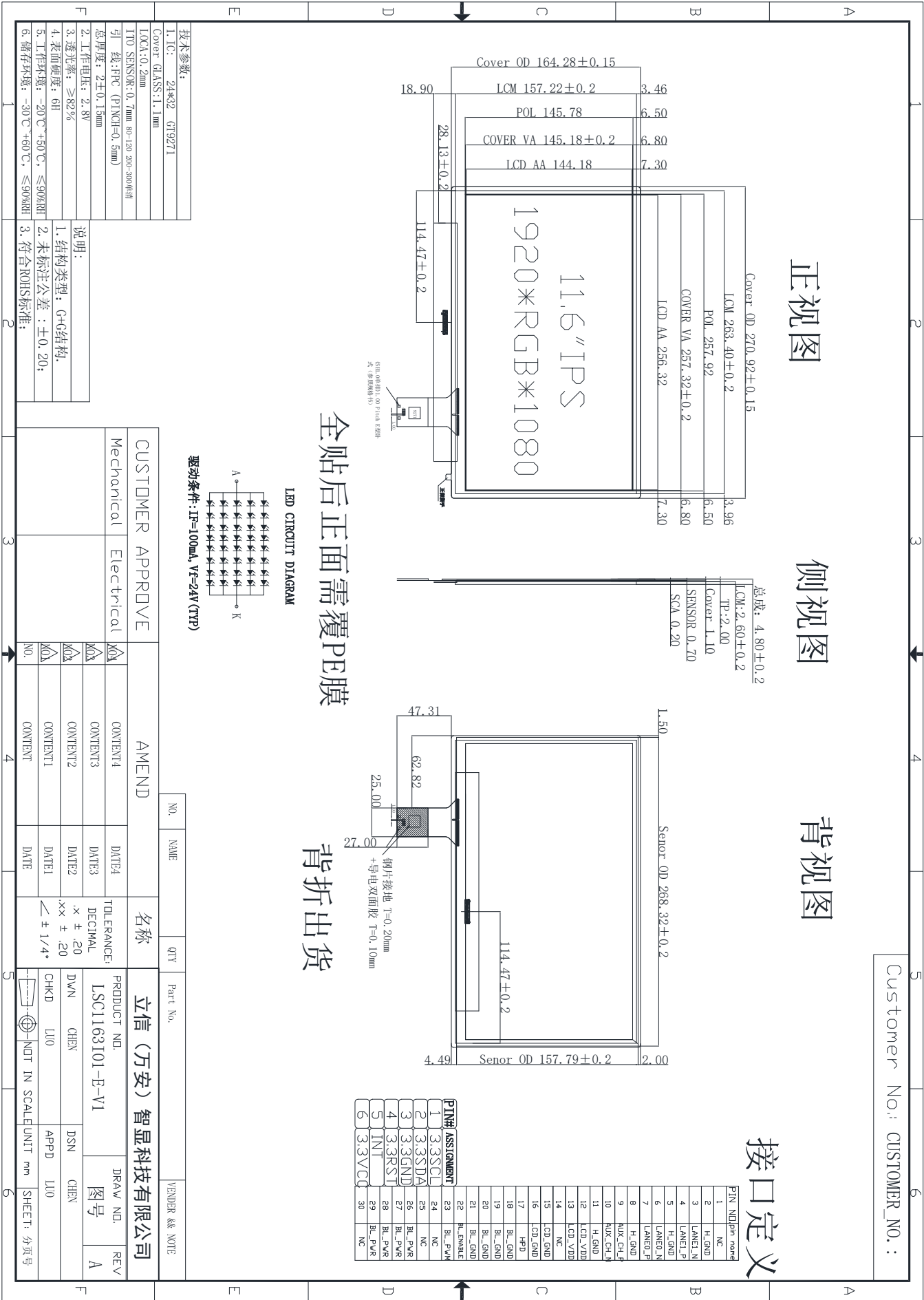
Item	Symbol	Min	Typ.	Max.	Unit	Note
LED current	IF	-	-	-	mA	-
LED voltage	V	-	-	-	V	-
Brightness Uniformity	Iv-m	-	80	-	-	-
Backlight lifetime	T	-	15000	-	hrs	25 °C

6.2 Back Light Circuit



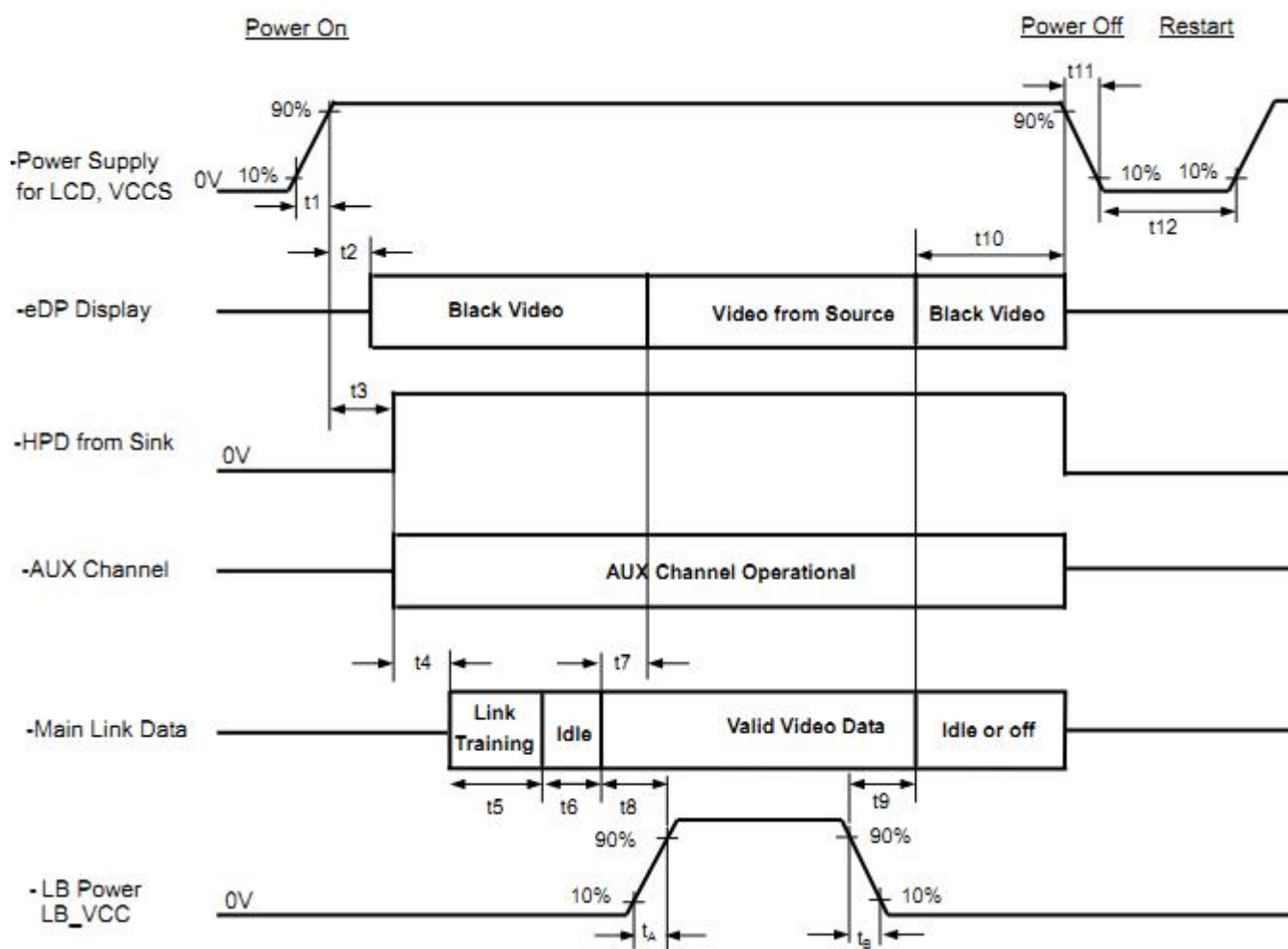
背光电路图

Backlight LED Circuit



8. Power、Signal Sequence

4.6 POWER ON/OFF SEQUENCE



Records of Revision

[illegible]