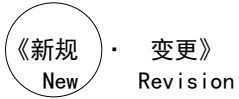

TO : _____



产品规格书

Product Specification

产品名
Product **TFT-LCD Module**

机种名
Model **RS133ZX-NE10**

※ 本基准书由封面、附件等全_18_页构成。

※ This Product Specification have18 pages including the coversheet and Appendices.

1. Application

This specification applies to a color TFT-LCD Module, M133X54-116-0401

2. Overview

This Open-cell is a color active matrix LCD open-cell incorporating Oxide TFT (Thin Film Transistor). It is composed of a color TFT-LCD panel, driver ICs, a control circuit and power supply circuit. Graphics and texts can be displayed on a 1920×3×1080 dots panel with 16,777,216 colors by using eDP (Embedded Display Port) Ver1.2 interface and supplying +3.3V DC supply voltage for TFT-LCD panel driving.

In this TFT-LCD panel, color filters for excellent color performance is incorporated to realize brighter and clearer pictures, making this open-cell optimum for use in multi-media applications.

Optimum viewings are in all directions.

Without Backlight-driving LED controller.

eDP transfer rate specification: 2.7Gbps/2 lane.

3. Mechanical specifications.

Parameter	Specification	Unit	Note
Display size	337 (Diagonal)	mm	
	13.3 (Diagonal)	inch	
Active area	293.76(H) × 165.24(V)	mm	
Pixel Format	1920(H) × 1080(V) (1pixel = R + G + B dot)	pixel	
Pixel pitch	0.153(H) x 0.153 (V)	mm	
Pixel configuration	R, G, B vertical stripe		
Display mode	Normally black		
Surface treatment of front polarizer	Anti-glare coating: (3H)		

Outline dimensions

Parameter	Min.	Typ.	Max.	Unit	Remark	
Unit outline dimensions	Width	307.4	307.6	307.8	mm	
	Height	182.85	183.05	183.25	mm	
	Depth	5.3	5.5	5.7	mm	[Note3-1]
Mass			TBD	g		

[Note 3-1] With shading tape, without warpage and deflection.

4. Input Terminals

4-1 Driving interface of PWB

CN1 (eDP signals, +3.3V DC power supply and B/L power supply)

Pin No.	Symbol	I/O	Function	Remark
1	NC	-	NC(NOT USE)	[Note4-1-1]
2	H_GND	P	High Speed Ground	[Note4-1-2]
3	Lane1_N	I	Complement Signal Link Lane 1	
4	Lane1_P	I	True Signal Link Lane 1	
5	H_GND	P	High Speed Ground	[Note4-1-2]
6	Lane0_N	I	Complement Signal Link Lane 0	
7	Lane0_P	I	True Signal Link Lane 0	
8	H_GND	P	High Speed Ground	[Note4-1-2]
9	AUX_CH_P	I	True Signal Auxiliary Channel	
10	AUX_CH_N	I	Complement Signal Auxiliary Channel	
11	H_GND	P	High Speed Ground	[Note4-1-2]
12	LCD_VCC	P	LCD logic and driver power(3.3V)	
13	LCD_VCC	P	LCD logic and driver power(3.3V)	
14	NC	-	NC(NOT USE)	[Note4-1-1]
15	LCD_GND	P	LCD logic and driver ground	
16	LCD_GND	P	LCD logic and driver ground	
17	HPD	O	HPD Signal	[Note4-1-3]
18	LED-1	P	Open this pin	
19	LED-2	P	Open this pin	
20	LED-3	P	Open this pin	
21	LED-4	P	Open this pin	
22	LED_PWMO	O	Open this pin	
23	LED_PWM_I	I	Open this pin	4- -]
24	NC	-	NC(NOT USE)	[Note4-1-1]
25	NC	-	NC(NOT USE)	[Note4-1-1]
26	LED-5	P	Open this pin	
27	LED-6	P	Open this pin	
28	BL_PWR	P	Open this pin	
29	BL_PWR	P	Open this pin	
30	NC	-	NC(NOT USE)	[Note4-1-1]

*1 P: POWER I: Input O: Output

[Note 4-1-1] Don't input any signals or any powers into a NC pin. Keep the NC pin open.

[Note 4-1-2] The shielding case is connected with signal GND.

- Connector used :20455-030E-76 (I-PEX)
- Corresponding connector : 20453-030T (I-PEX)

(Sanstar is not responsible to its product quality, if the user applies a connector not corresponding to the above model.)

The equivalent circuit figure of the terminal.

[Note 4-1-3]

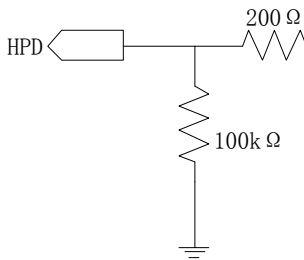


Fig.4-1-1 Equivalent circuit (Pin No.17)

[Note 4-1-4]

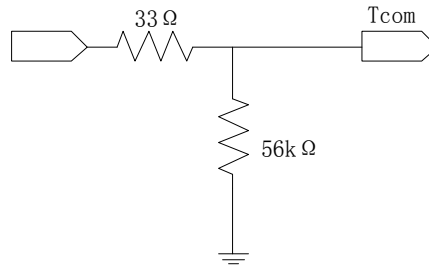


Fig.4-1-2 Equivalent circuit (Pin No.23)

4-2eDP interface

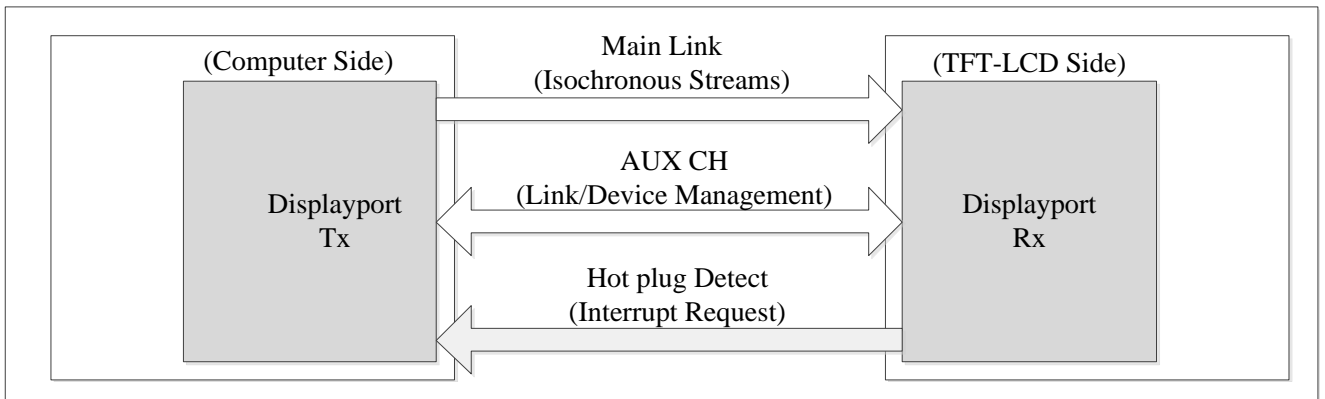


Fig.4-2-1 DP architecture

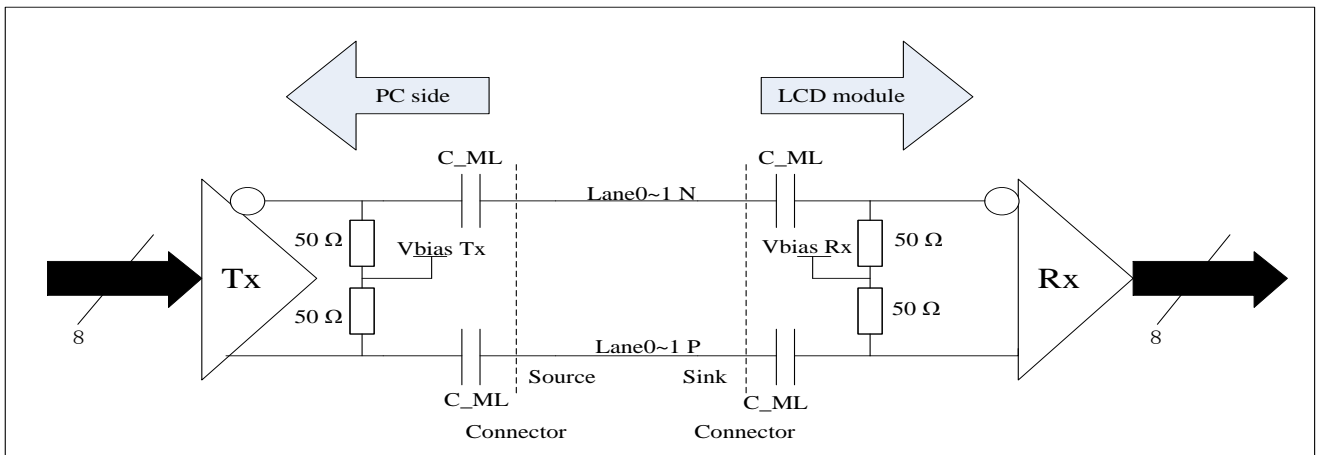


Fig.4-2-2 Main Link differential pair

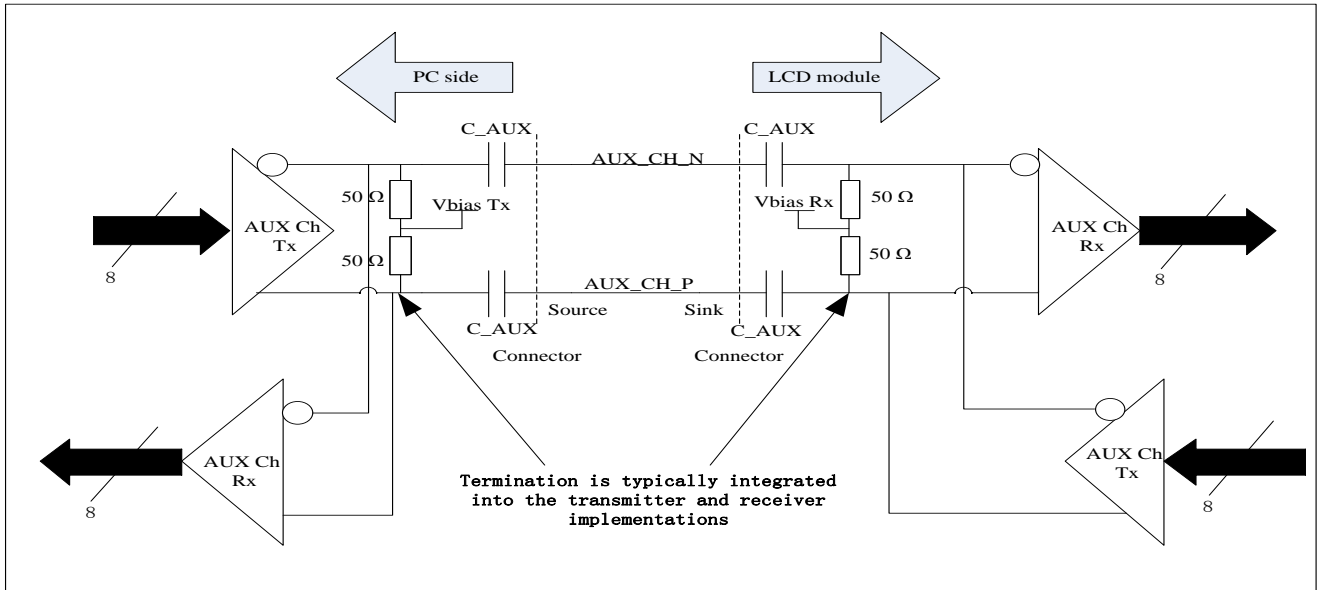


Fig.4-2-3 AUX Link differential pair

Lane0	Lane1
R0-7:0	R1-7:0
G0-7:0	G1-7:0
B0-7:0	B1-7:0
R2-7:0	R3-7:0
G2-7:0	G3-7:0
B2-7:0	B3-7:0
R4-7:0	R5-7:0
G4-7:0	G5-7:0
B4-7:0	B5-7:0

Fig.4-2-4 eDP 2lane 8bit input data mapping

5. Electrical Characteristics

5-1. Absolute Maximum Ratings

Parameter	Symbol	Condition	Ratings		Unit	Remark
			Min.	Max.		
+3.3V supply voltage	VDD	Ta=25°C	-0.3	+4.0	V	
Back Light supply voltage	VBL	Ta=25°C	-0.3	+19.8	V	
Input voltage(eDP)	VI	Ta=25°C	-0.3	+1.5	V	[Note 5-1]
Input voltage(BL)	VBL_I	Ta=25°C	-0.3	VDD+0.3	V	[Note 5-2]
Operation temperature	TOPR	-	-20	+70	°C	[Note 5-3]
Storage temperature	TSTG	-	-20	+70	°C	

(*) “Absolute Maximum Ratings” is regulations that do not exceed it even momentarily.

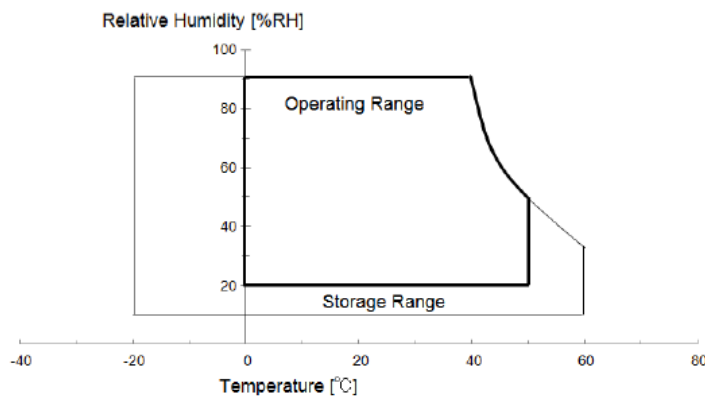
(*) Stress beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device.

[Note 5-1] eDP signal

[Note 5-2] Backlight control signals (BL_ENABLE, BL_PWM_DIM)

[Note 5-3] Humidity: 90% RH Max. (Ta ≦ +40°C).

Maximum wet-bulb temperature at +39°C or less at Ta > +40°C, No condensation.



5-2. DC Characteristics

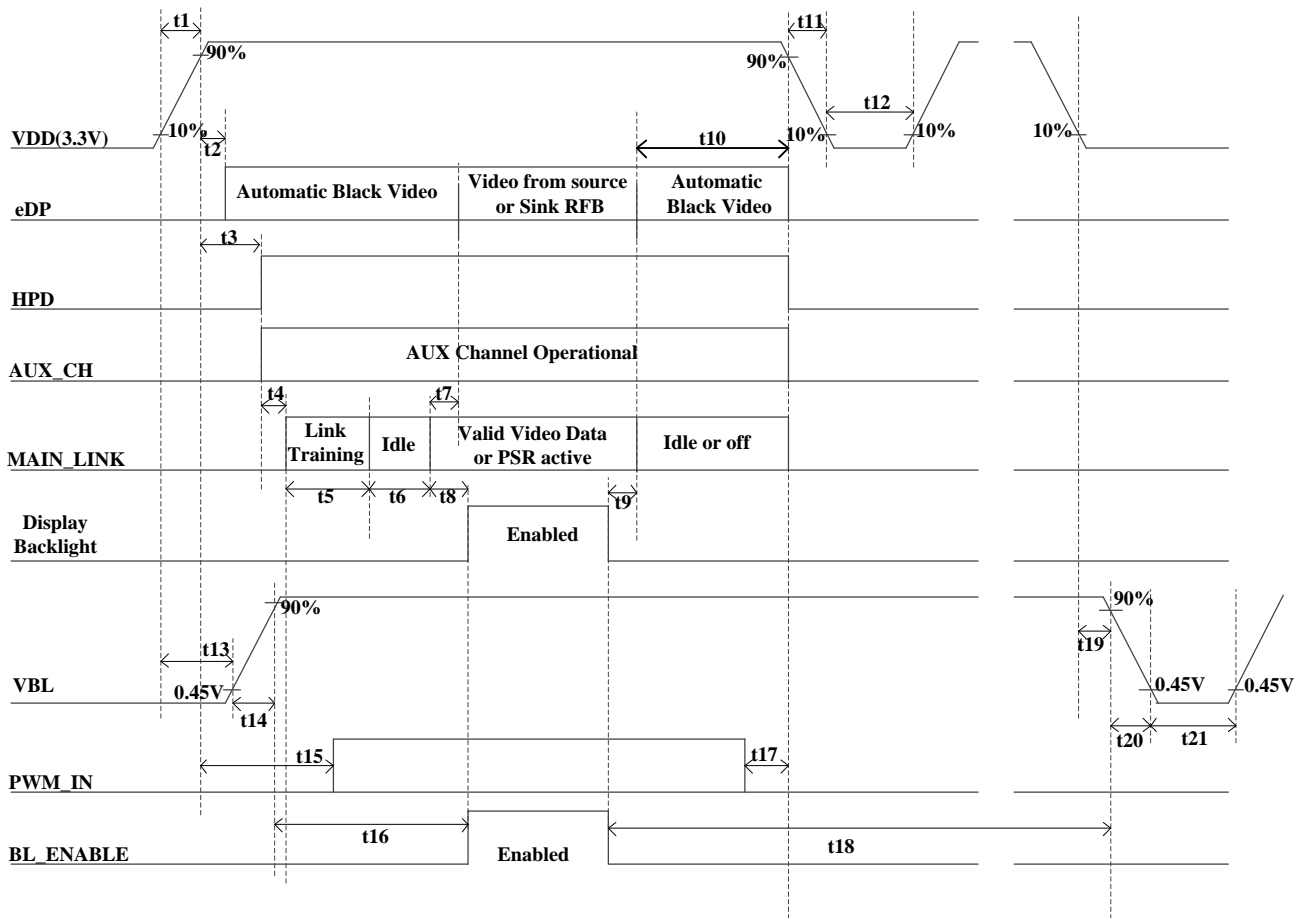
5-2-1. TFT-LCD panel driving

Ta = +25°C

DC Electrical Characteristics						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
+3.3V supply voltage	VDD	+3.0	+3.3	+3.6	V	[Note 5-2-1]
Current dissipation	IDD	-	TBD		mA	[Note 5-2-2]
Permissible input ripple voltage	V _{RP}	-	-	100	mVp-p	VDD = +3.3V
eDP AUX Channel Characteristics						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Unit Interval for AUX channel	UI _{AUX}	0.4	0.5	0.6	μS	
Peak-to-peak voltage at TP1	V _{AUX-DIFF-PP}	0.32	-	1.36	V	
AUX DC Common mode Voltage	V _{AUX-DC-CM}	0	-	2.0	V	
AUX Short current limit	I _{AUX-SHORT}	-	-	90	mA	
AUX CH termination DC resistor	R _{AUX-TERM}	-	100	-	Ω	Differential input
AUX AC coupling capacitor	C _{AUX}	75	-	200	nF	
Number of pre-charge pulses	Pre-charge pulses	10	-	16		
eDP Main Link Receiver Characteristics						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark

Link clock down spreading	Down_Spread_Amplitude	0	-	0.5	%	
Differential Peak-to-peak Input Voltage at Rx package pins	$V_{RX-DIFFp-p}$	90	-	1200	mV	
Differential Return Loss at 1.35GHz at Rx package pins	$RL_{RX-DIFF}$	9	-	-	dB	
Differential termination resistance	$R_{RX-TERM}$	-	100	-	Ω	
RX short circuit Current Limit	$I_{RX-SHORT}$	-	-	50	mA	
Lane Intra-pair Skew at RX package pins	$T_{RX-SKEW-INTRA-PAIR-High-Bit-Rate}$	-	-	50	ps	

[Note 5-2-1] ON-OFF conditions for supply voltage



[Note5-2-1] Do not keep the interface signal high-impedance or unusual signal when power is on.

Symbol	Min	Max	Unit	Note
t1	0.5	10	ms	
t2	0	200	ms	
t3	0	100	ms	
t4	-	-	ms	
t5	-	-	ms	
t6	-	-	ms	
t7	0	50	ms	
t8	-	-	ms	
t9	-	-	ms	

t10	0	500	ms	
t11	1	50	ms	[Note 5-2-3]
t12	500	-	ms	
t13	-	-	ms	
t14	0.5	10	ms	
t15	100	-	ms	
t16	0	-	ms	
t17	0	-	ms	
t18	-	-	ms	
t19	-	-	ms	
t20	0.1	-	ms	
t21	100	-	ms	

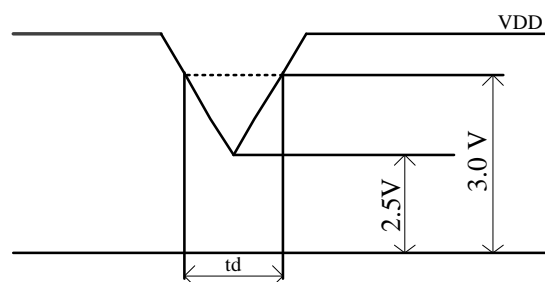
[Note 5-2-3]As for the power off sequence for VDD (t11), be sure to keep above mentioned timing.
 If the VDD power off sequence timing is other than shown above, LCD may cause permanent damage.
 *1 : As for the power sequence for backlight, it is recommended to apply above mentioned input timing.
 If the backlight is light on and off at a timing other than shown above, displaying image maybe get disturbed.

VDD-dip-conditions

- 1) $2.5\text{ V} \cong \text{VDD} < 3.0\text{ V}$
 $t_d \cong 10\text{ ms}$

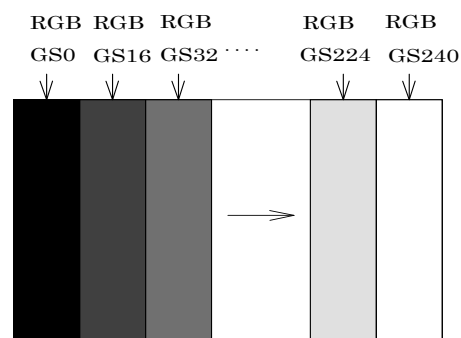
Under above condition, the display image should return to appropriate figure after VDD voltage recovers.

- 2) $\text{VDD} < 2.5\text{ V}$
 VDD-dip conditions should also follow the ON-OFF conditions for supply voltage.



[Note 5-2-2]

Typical current condition: 16-gray-bar pattern.
 $\text{VDD} = +3.3\text{ V}$



Maximum current condition: Vertical stripe pattern.
 $\text{VDD} = +3.3\text{ V}$



5-3. Backlight driving

The backlight system is an edge-lighting type with white-LED.

(It is usually required to measure under the following condition: $T_a=25^{\circ}\text{C} \pm 2^{\circ}\text{C}$)

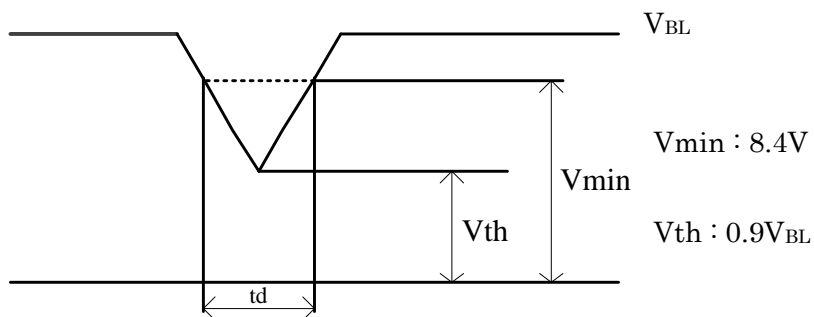
Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Supply voltage	V_{BL}	18	19.8	21	V	
Current dissipation	I_{BL}	-		405	540	mA
Modulated light signal voltage	V_{PWMH}	1.85	-	VDD	V	
	V_{PWL}	0	-	0.7	V	
Brightness Control Duty Ratio	Duty	1	-	100	%	【Note5-3-1】
Brightness Control pulse width	T_{PWM}	5	-	-	us	【Note5-3-2】
Brightness Control frequency	f_{PWM}	200	-	2000	Hz	
LED-BL ON/OFF High voltage	V_{CNTH}	1.3	-	VDD	V	【Note5-3-3】
LED-BL ON/OFF Low voltage	V_{CNTL}	0	-	0.5	V	
Input signal (H level) pin current	I_{IN}	-	-	$V_{IN}/56K\Omega$	μA	BL_ENABLE, BL_PWM_DIM
LED lifetime	-	-	10000	-	h	LED

【Note5-3-1】 V_{PWM} Input : 100%= Max luminance 1%= Min luminance

【Note5-3-2】 The minimum value of the dimming signal pulse width is assumed regulations of the width of high and the width of low.

【Note5-3-3】 V_{CNT} Input : High = BL turn on, Low or OPEN =BL turn off

VBL-dip conditions



$$1) V_{th} \leq V_{BL} < V_{min} : t_d \leq 20\text{ms}$$

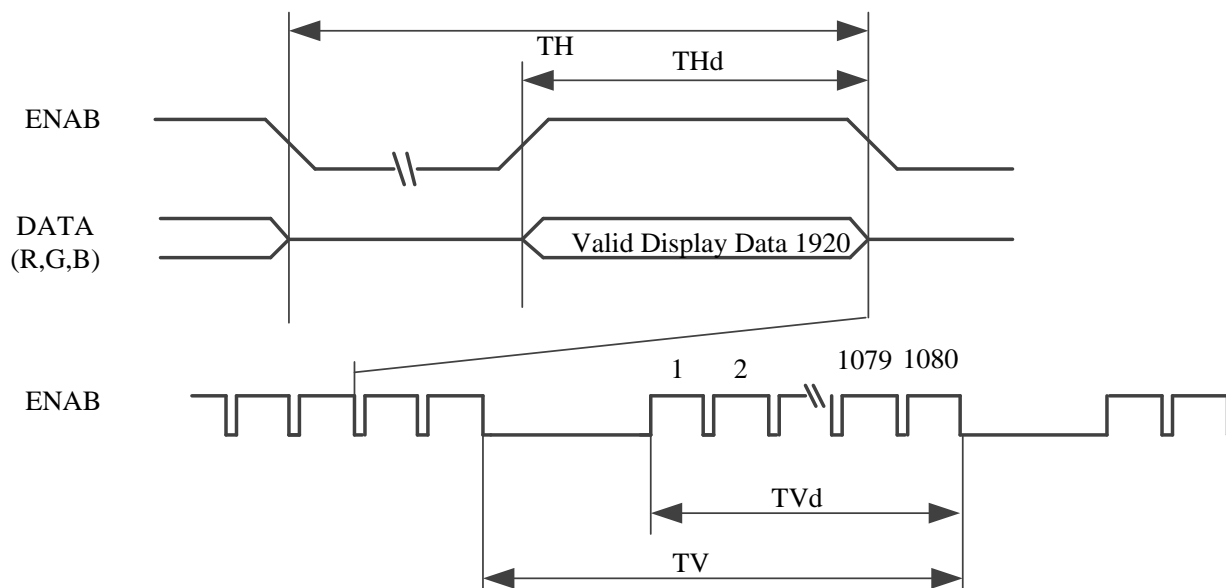
2) $V_{BL} < V_{th}$: The condition of instantaneous voltage drop is apply to input voltage sequences

6. Timing characteristics of input signals

6-1. Timing Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Remark
Clock	Frequency	1/T _C	132.0	138.5	140.0	MHz	[Note 6-1-1]
Data enable signal	Horizontal period	TH	2020	2080	2400	clock	
				15.02		μs	
	Horizontal period (High)	THd	-	1920	-	clock	
	Vertical period	TV	1090	1111	1200	line	
			-	16.685	-	ms	
Vertical period (High)	TVd	-	1080	-	line		

[Note 6-1-1] In case of using the long vertical period, the deterioration of display quality, flicker, etc., may occur.



6-2. Input data signals and display position on the screen



Display position of input data(V H)

7. Input signal, basic display colors and gray scale of each color

Colors & Gray Scale		Data signal																											
		R0 R1 R2 R3 R4 R5 R6 R7							G0 G1 G2 G3 G4 G5 G6 G7							B0 B1 B2 B3 B4 B5 B6 B7													
		LSB							MSB							LSB							MSB						
Basic Color	Black	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Blue	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1
	Green	–	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
	Cyan	–	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Red	–	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Magenta	–	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1
	Yellow	–	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
	White	–	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gray Scale of Red	Black	GS0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	↑	GS1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Darker	GS2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	↑	↓	↓							↓							↓												
	↓	↓	↓							↓							↓												
	Brighter	GS253	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	↓	GS254	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Red	GS255	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Gray Scale of Green	Black	GS0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	↑	GS1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Darker	GS2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	↑	↓	↓							↓							↓												
	↓	↓	↓							↓							↓												
	Brighter	GS253	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
	↓	GS254	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
	Green	GS255	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
Gray Scale of Blue	Black	GS0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	↑	GS1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
	Darker	GS2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
	↑	↓	↓							↓							↓												
	↓	↓	↓							↓							↓												
	Brighter	GS253	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	
	↓	GS254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	
	Blue	GS255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	

0: Low level voltage, 1: High level voltage.

Each basic color can be displayed in 256 gray scales from 8 bit data signals.

According to the combination of 24 bit data signals, the 16.7M color display can be achieved on the screen.

8. EDID Specifications (TBD)

9. Optical characteristics

Ta=25°C

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing angle range	Horizontal	021 022	CR > 10	80	89	-	Deg.	[Note9-1,9-3,9-4,9-6]
	Vertical	011		80	89	-	Deg.	
		012		80	89	-	Deg.	
Contrast ratio		CR		700	1000	-	-	[Note9-2,9-4,9-6]
Response time		$\tau_r + \tau_d$		-	25	-	ms	[Note9-1,9-5,9-6]
Chromaticity of white		x		0.283	0.313	0.343	-	[Note 9-2, 9-6] Normal operation (PWM Duty=100%)
		y		0.299	0.329	0.359	-	
Chromaticity of red		x	$\theta = 0 \text{ deg.}$	-	TBD	-	-	
		y		-	TBD	-	-	
Chromaticity of green		x		-	TBD	-	-	
		y		-	TBD	-	-	
Chromaticity of blue		x		-	TBD	-	-	
		y		-	TBD	-	-	
NTSC ratio		%		-	72	-	-	
Luminance of white		Y_{L1}		-	1000	-	cd/m ²	
White uniformity 13pt		δ_w	$\theta = 0 \text{ deg.}$	-	1.3	1.5	-	[Note 9-2, 9-7]

※The measurement shall be taken 30 minutes after lighting the module at the following rating.

Condition: PWM Duty = 100%

The optical characteristics shall be measured in a dark room or equivalent.

[Note 9-1] Measurement of viewing angle range [Note 9-2] Measurement of luminance and Response time. Chromaticity and Contrast.

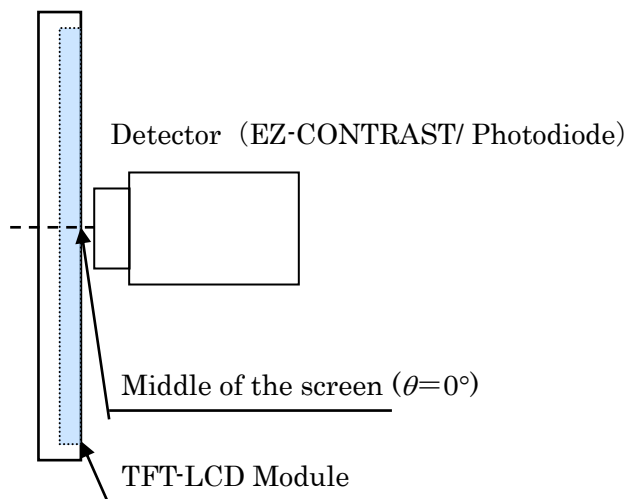


Fig.9-1 Measurement of Viewing angle range and Response time.
(Viewing angle range: EZ-CONTRAST, Response time: Photodiode)

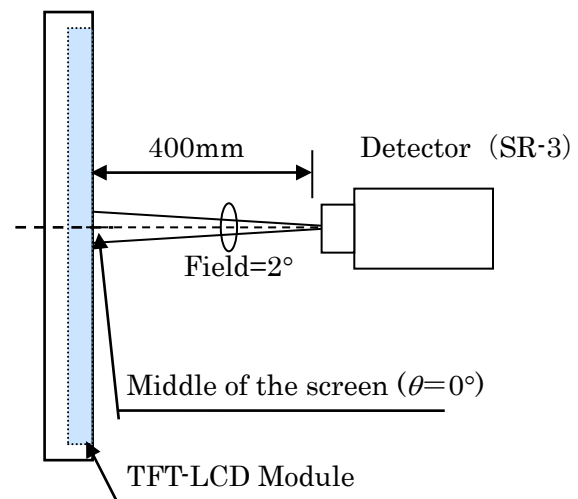


Fig.9-2 Measurement of Contrast, Luminance, Chromaticity, White variation, Crosstalk and Color temperature variation.

[Note 9-3]Definitions of viewing angle range:

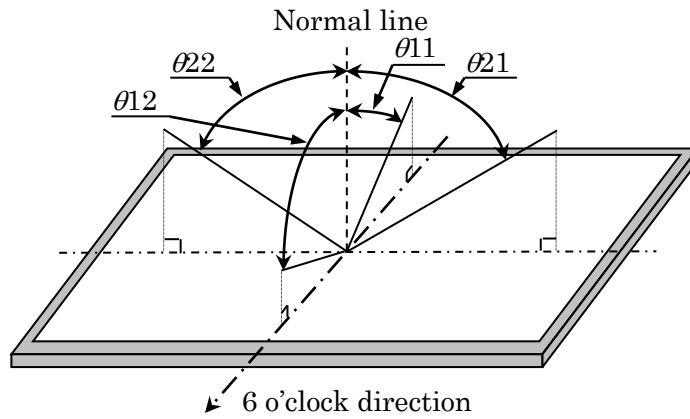


Fig.9-3 Viewing angle

[Note 9-4]Definition of contrast ratio:

The contrast ratio is defined as the following.

$$\text{Contrast Ratio} = \frac{\text{Luminance(Brightness) with all pixels white}}{\text{Luminance(Brightness) with all pixels Black}}$$

[Note 9-5]Definition of response time:

The response time is defined as the following figure and shall be measured by switching the input signal for "black" and "white" .

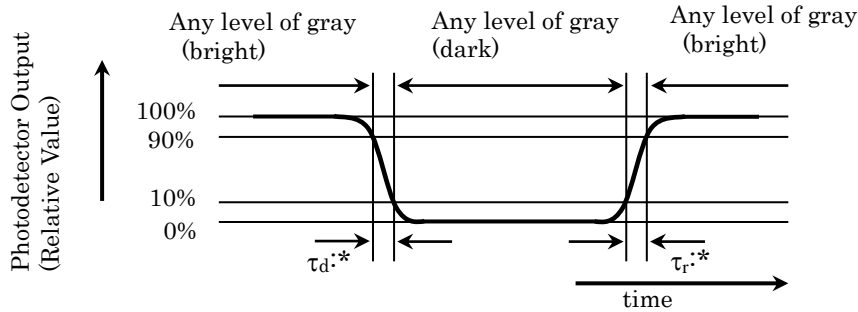


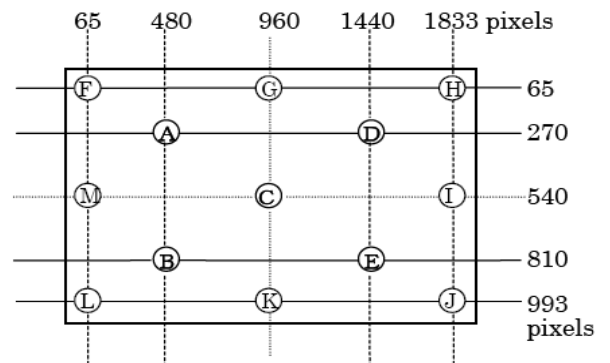
Fig.9-4 Response time

[Note 9-6] This shall be measured at center of the screen.

[Note 9-7]Definition of white uniformity:

White uniformity is defined as the following with 13 measurements(A ~ M).

$$\delta_w = \frac{\text{Maximum Luminance of 13 Points(Brightness)}}{\text{Minimum Luminance of 13 Points(Brightness)}}$$



10. Display Quality

The display quality of the color TFT-LCD module shall be in compliance with the Incoming Inspection Standard.

11. Handling Precautions

- a) Be sure to turn off the power supply when inserting or disconnecting the cable.
Please insert for too much stress not to join a connector in the case of insertion of a connector.
- b) Be sure to design the cabinet so that the module can be installed without any extra stress such as warp or twist.
- c) Since the front polarizer is easily damaged, pay attention not to scratch it.
- d) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.
- e) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
- f) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface. Handle with care.
- g) Since CMOS LSI is used in this module, take care of static electricity and injure the human earth when handling. Observe all other precautionary requirements in handling components.
- h) This module has its circuitry PCBs on the side and should be handled carefully in order not to be stressed.
- i) Laminate film is attached to the module surface to prevent it from being scratched. Peel the laminate film off slowly just before the use with strict attention to electrostatic charges. Ionized air shall be blown over during the action. Blow off the 'dust' on the polarizer by using an ionized nitrogen gun, etc. Working under the following environments is desirable.
 - All workers wear conductive shoes, conductive clothes, conductive fingerstalls and grounding belts without fail.
 - Use Ionized blower for electrostatic removal, and peel of the laminate film with a constant speed. (Peeling of it at over 2 seconds)
- j) The polarizer surface on the panel is treated with Anti-Glare. In case of attaching protective board over the LCD, be careful about the optical interface fringe etc. which degrades display quality.
- k) Do not expose the LCD module to a direct sunlight, for a long period of time to protect the module from the ultra violet ray.
- l) When handling LCD modules and assembling them into cabinets, please be noted that long-term storage in the environment of oxidization or deoxidization gas and the use of such materials as reagent, solvent, adhesive, resin, etc. which generate these gasses, may cause corrosion and discoloration of the LCD modules.
- m) Liquid crystal contained in the panel may leak if the LCD is broken. Rinse it as soon as possible if it gets inside your eye or mouth by mistake.
- n) Disassembling the module can cause permanent damage and should be strictly avoided.
Please don't remove the fixed tape, insulating tape etc that was pasted on the original module.
(Except for protection film of the panel.)
- o) Be careful when using it for long time with fixed pattern display as it may cause afterimage.
(Please use a screen saver etc., in order to avoid an afterimage.)
- p) If a minute particle enters in the module and adheres to an optical material, it may cause display non-uniformity issue, etc. Therefore, fine-pitch filters have to be installed to cooling and inhalation hole if you intend to install a fan.
- q) Epoxy resin (amine series curing agent), silicone adhesive material (dealcoholization series and oxime series), tray forming agent (azo compound) etc, in the cabinet or the packing materials may induce abnormal display with polarizer film deterioration regardless of contact or noncontact to polarizer film.
Be sure to confirm the component of them.
- r) Do not use polychloroprene. If you use it, there is some possibility of generating Cl₂ gas that influences the reliability of the connection between LCD panel and driver IC.
- s) Do not put a laminate film on LCD module, after peeling of the original one. If you put on it, it may cause discoloration or spots because of the occurrence of air gaps between the polarizer and the film.
- t) Ground module bezel to stabilize against EMI and external noise.

12. Packaging Condition(TBD)

13. Label (TBD)

14. RoHS Directive

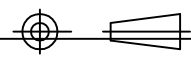
This LCD module is compliant with RoHS Directive.

15. Reliability Test Items(TBD)

Date: 2018.06.28

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THE THIRD ANGLE



Customer Code.:

CUSTOMER'S P/N:

FX'S P/N(exclude wrapper):

M133X54-116-0401

SPECIFICATION OF BACKLIGHT

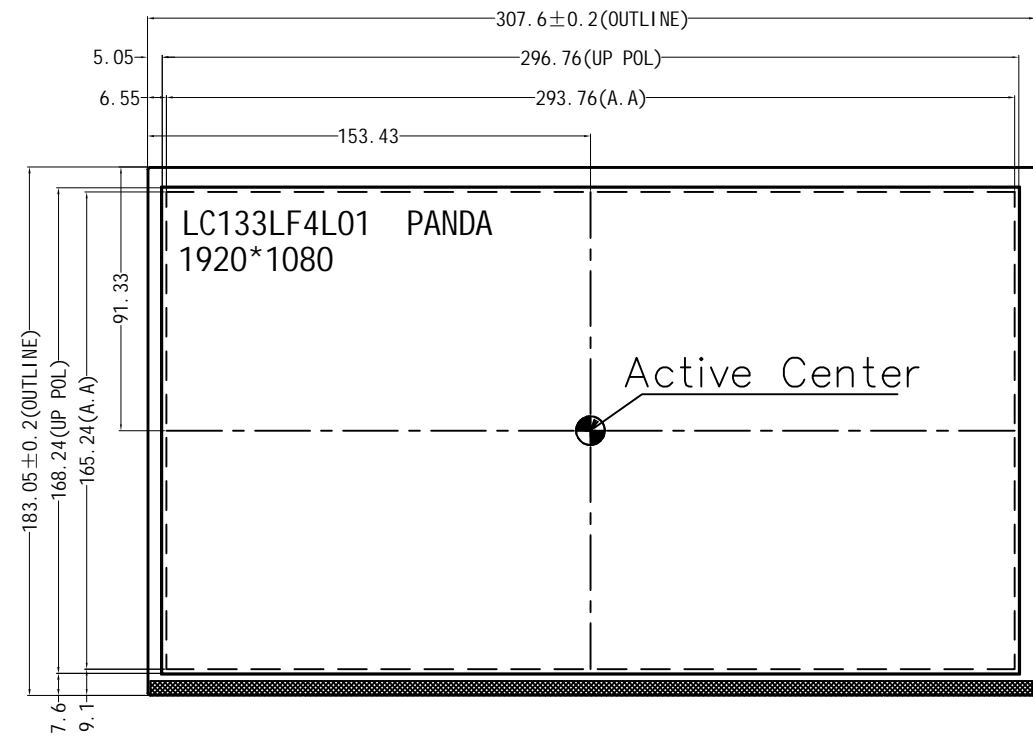
EDITION: 01

FX'S P/N: (include wrapper)

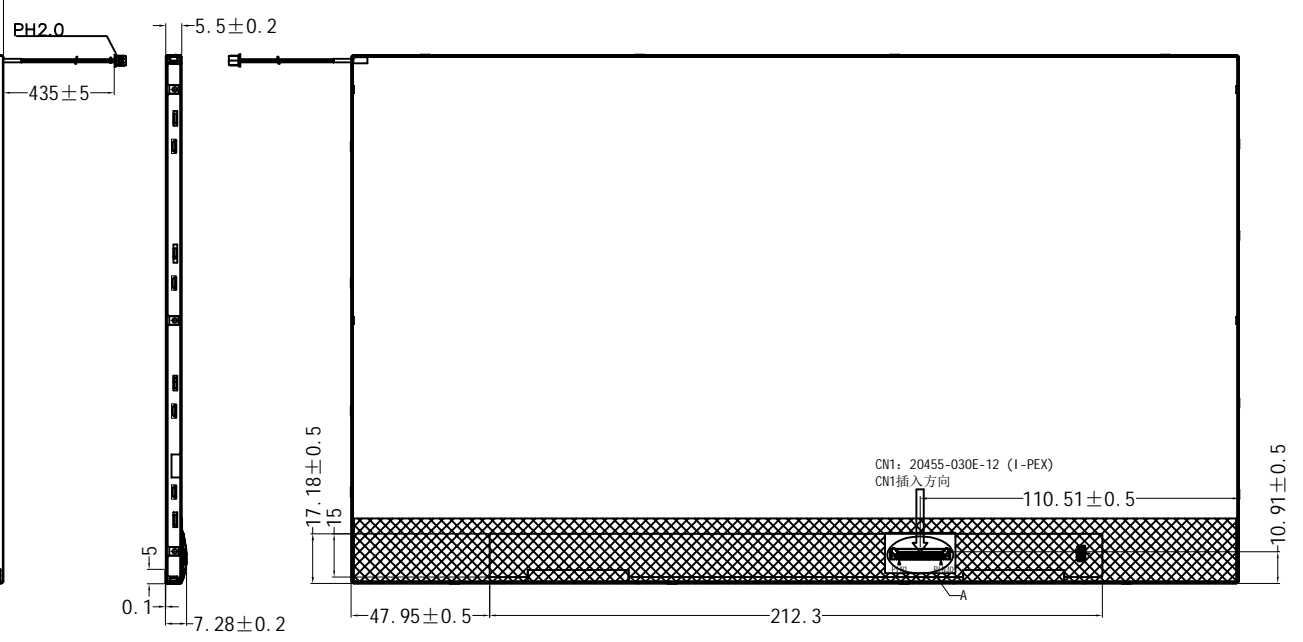
Approval(核准)

Check (检查)

Design(计)



白色为正极，黑色为负极



Notes:

- Unit:mm.
- Do not scale drawing.
- All radii without dimension R0.2.
- △Modification Mark.
- draft angle: 1°
- Backlight luminance : 800cd/m²(TYP)
- Luminance uniformity: 75%(min)(min/max*100%)
- UnSpecified Tolerance is ±0.2
- Operation conditions :If= 360mA(TYP).405mA(MAX), Vf=23-25V(MAX)
Color coordinate: X=0.27-0.35,Y=0.27-0.35
- All materials comply with RoHS
- The measured value of luminance and color coordinate bases FX's BM-7
- Check item:1~9

12	Front iron frame (上铁框)	0
11	FPC (软制电路板)	0
10	Double_sided stick (双面胶)	2
9	HOUSING (塑胶框)	1
8	PCB(印制电路板)	1
7	Wire (导线)	1
6	LED(发光二极体)	54
5	BEF(增光片)	2
4	Diffuser film(扩散片)	1
3	Light guide plate(导光板)	1
2	Reflector film(反射膜)	1
1	Rear iron frame(下铁框)	1
		Quantity

REV	DATE	DESCRIPTION (修改内容)	REVISER	NO.	TITLE	Quantity

Customer: 客户 Approval Date: 确认日期 Approve by: 确认

1 2 3 4 5 6 7 8