



PROPRIETARY NOTE

THIS SPECIFICATION IS THE PROPERTY OF BOE FZ AND SHALL NOT BE REPRODUCED OR COPIED WITHOUT THE WRITTEN PERMISSION OF BOE FZ AND MUST BE RETURNED TO BOE FZ UPON ITS REQUEST

TITLE : MV270QUM-NY0-A940

Product Final Specification

Ver.O

Fuzhou BOE Optoelectronics Technology Co., Ltd

SPEC. NUMBER

PRODUCT GROUP

Ver.O

ISSUE DATE

PAGE

S8-64-8D-477

TFT-LCD

2024.11.12

1 OF 38

BOE www.szguangzhuo.com 广卓液晶 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

REVISION HISTORY

- () Preliminary specification
- (●) Final specification

Revision No.	Page	Description of changes	Date	Prepared
O		Initial Release	2024.11.12	Liangzhen Lin

--	--	--

SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	2 OF 38

Contents

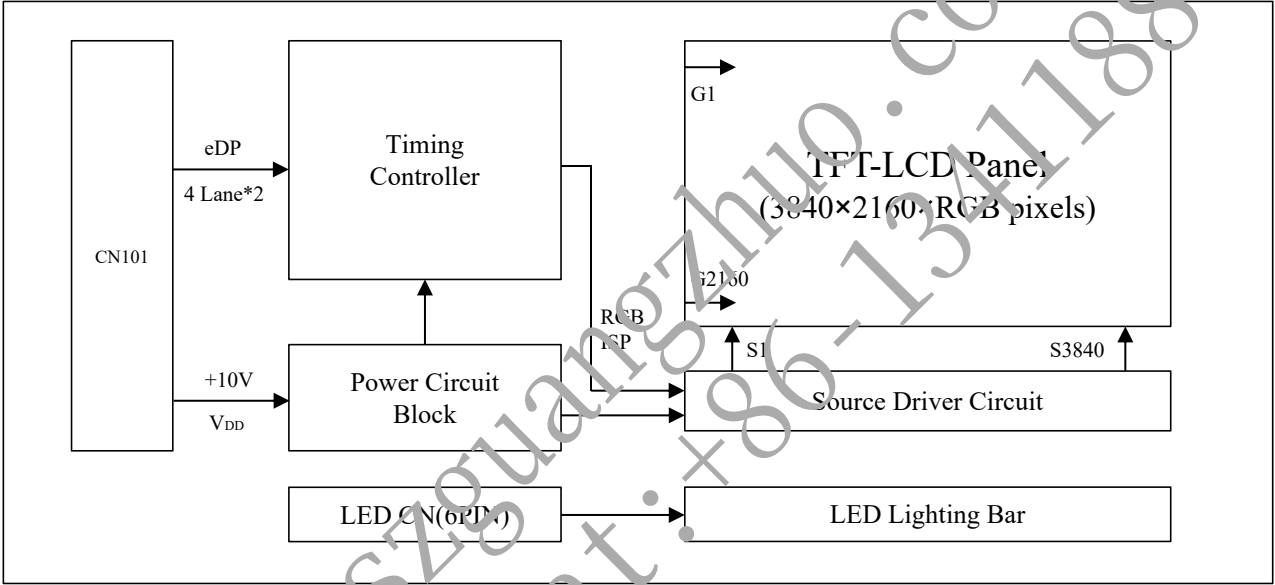
No.	Item	Page
1.0	General Description	4
2.0	Absolute Maximum Ratings	6
3.0	Electrical Specifications	7
4.0	Optical Specifications	10
5.0	Interface Connection	12
6.0	Signal Timing Specifications	20
7.0	Input Signals, Display Colors & Gray Scale of Colors	21
8.0	Power Sequence	22
9.0	Mechanical Characteristics	24
10.0	Reliability Test	25
11.0	Handling& Cautions	27
12.0	International standards	29
13.0	Product Serial Number	30
14.0	Packing	31
15.0	Appendix	34

BOE www.szguangzhuo.com 广卓液晶 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

1.0 GENERAL DESCRIPTION

1.1 Introduction

MV270QUM-NY0 is a color active matrix TFT LCD module using amorphous silicon TFT's (Thin Film Transistors) as an active switching devices. This module has a 27 inch diagonally measured active area with UHD resolutions (3840 horizontal by 2160 vertical pixel array). Each pixel is divided into RED, GREEN, BLUE dots which are arranged in vertical stripe and this module can display 1.07B colors. The TFT-LCD panel used for this module is adapted for a low reflection and higher color type.



1.2 Feature

- 2*4 Lanes eDP Interface with 5.4Gbps Link Rates
- 10bit (input) color depth, display 1.07B colors (8bit+FRC Output)
- DE (Data Enable) only
- Gamma correction
- Reverse type
- Compatible with sRGB 99% typ.@CIE1931
- TUV2(Low Blue Light)
- Compatible with TCO 9.0, ES 8.0

1.3 Application

- Desktop Type of PC & Workstation Use
- Slim-Size Display for Stand-alone Monitor
- Display Terminals for Control System
- Monitors for Process Controller

SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	4 OF 38

1.4 General Specification

The followings are general specifications at the model MV270QUM-NY0.

<Table 1. General Specifications>

Parameter	Specification
Active area	596.736(H) × 335.664(V) mm
Number of pixels	3840(H) × 2160(V)
Pixel pitch	0.1554(H) × 0.1554(V) mm
Pixel arrangement	RGB Vertical stripe
Display colors	1.07B colors
Color gamut	sRGB 99% typ.@CIE1931
Brightness	350nit (Typ.)
Contrast ratio	1500:1 (Typ.)
Response time	14ms (Typ.)
Frame rate	60 (Typ.) / 121 (Max.) Hz
Power consumption	Total 20.32W (Typ.)(5.7W@ White pattern , 14.62W@ Is = 58mA)
Display mode	Normally Black
Dimensional outline	608.8(H)*352.4(V) *11.2(D)mm (Typ.)
Weight	(2800g) (Typ.)
Bezel width (L/R/U/D)	6.03/6.03/6.02/10.72mm (AA-Module outline)
Surface Treatment	Haze 25%, 3H
Back-light	Horizontal arranged, 1-LED Lighting Bar type
Low blue light	The ratio of light in the range from 415nm - 455nm compared to 400nm - 500nm is less than 35%, Category 2
Compliance	RoHS(Cd, Pb, Hg, Cr6+ free), Halogen free, TCO9.0, ES8.0
Worst case power consumption	Total 15.25W at 200nit; EE: (6.55W@ ES pattern, 60Hz), BLU: (8.7 W) Total 13.08W at 150nit; EE: (6.55W@ ES pattern, 60Hz), BLU: (6.53 W) EE:6.3W at CEL pattern

2.0 ABSOLUTE MAXIMUM RATINGS

The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit. The operational and non-operational maximum voltage and current values are listed in Table 2.

< Table 2. Absolute Maximum Ratings>

[VSS=GND=0V]

Parameter	Symbol	Min.	Max.	Unit	Remarks
Power Supply Voltage	V_{DD}	-0.3	10.5	V	Ta = 25 °C
Operating Temperature	T_{OP}	0	+50	°C	Note 1
Storage Temperature	T_{ST}	-20	+60	°C	Note 1
LCM Surface Temperature (Operation)	$T_{surface}$	0	+65	°C	Note 2
IC temperature	T_j	-	+125	°C	
LED Light Bar Input Current Per Input Pin	I_{PIN}	-	140	mA	Note 3

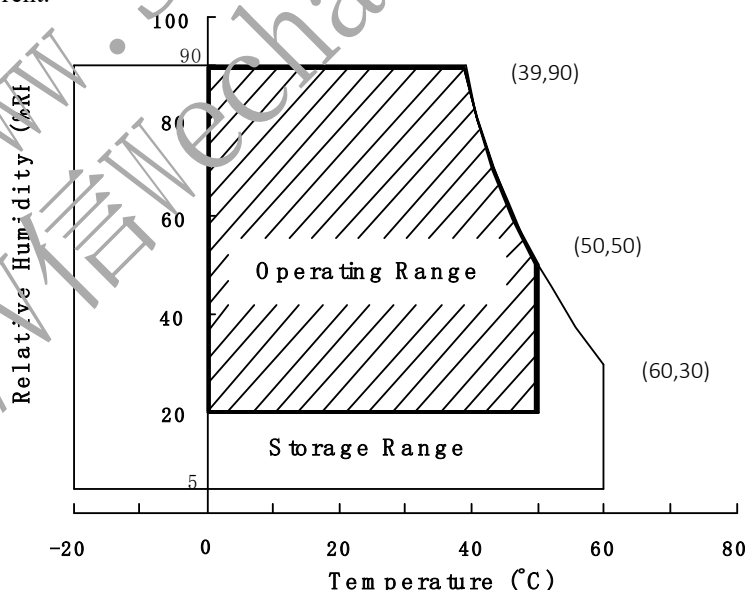
Note : 1. Temperature and relative humidity range are shown in the figure below.

Wet bulb temperature should be 39 °C max. and no condensation of water.

2. Panel Surface Temperature should be Min. 0°C and Max. +65°C under the $V_{DD} = 10.0V$,

Frame rate = 120Hz, 25°C ambient Temp. no humidity control and LED string current is typical value.

3. The maximum I_{PIN} is the absolute maximum rating for one single LED chip at $T_A=25^{\circ}C$, No guarantee for LCM lifetime and reliability test at this current, There could be permanent damage occur if over this AMR current.



3.0 ELECTRICAL SPECIFICATIONS

3.1 Electrical Specifications

< Table 3. Electrical specifications > [Ta =25±2 °C]

Parameter.		Min.	Typ.	Max.	Unit	Remarks
Power Supply Voltage	V _{DD}	9.5	10.0	10.5	V	
Power Supply Current	I _{DD Typ.}	-	570	630	mA	Note1
	I _{DD max}	-	1660	1830	mA	
In-Rush Current	I _{RUSH}	-	2.0	3.0	A	Note 2
Permissible Input Ripple Voltage	V _{RF}	-	-	300	mV	Note1,3
Power Consumption	P _{D Typ} -60Hz	-	5.7	6.3	W	Note1,5
	P _{D Typ} -100Hz	-	6.6	7.3	W	
	P _{D Typ} -120Hz	-	7.2	8.0	W	
	P _{D color test} -60Hz	-	7.8	8.6	W	
	P _{D color test} -100Hz	-	10.3	11.4	W	
	P _{D color test} -120Hz	-	11.4	12.6	W	
	P _{D Max} -60Hz	-	10.5	11.6	W	
	P _{D Max} -100Hz	-	14.8	16.3	W	
	P _{D Max} -120Hz	-	16.6	18.3	W	
	P _{BL}	-	14.62	15.69	W	Note 4 Is = 58mA
	P _{total Typ.}	-	20.32	21.99	W	@60Hz
	P _{total Max}	-	25.12	27.29	W	

BOE www.szguangzhuo.com 广卓液晶 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

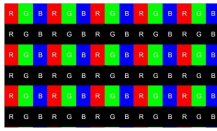
Note : 1. The supply voltage is measured and specified at the interface connector of LCM.
The current draw and power consumption specified is V_{DD} =10.0V, Frame rate=120Hz
Clock frequency = 1088 MHz. Test Pattern of power supply current is



a) Typ : full white

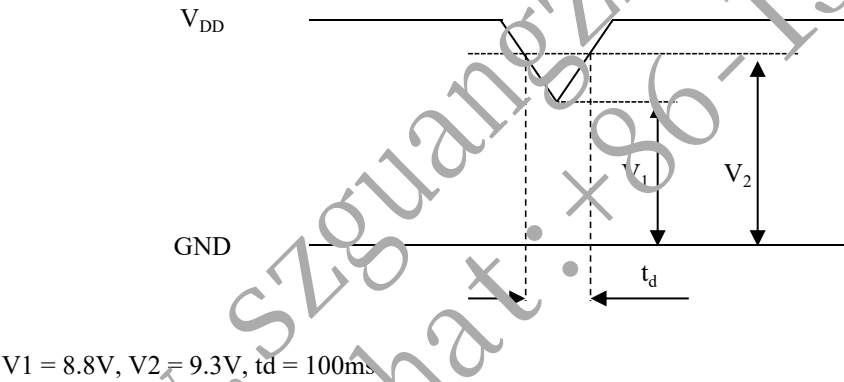


b) Color Test



c) Max : Horizontal 1 line 255

- Duration of rush current is about 2 ms and rising time of V_{DD} is $520\text{ }\mu\text{s} \pm 20\%$.
- Ripple Voltage should be covered by Input voltage Spec.
- Calculated value for reference (Input pins* V_{PIN} × I_{PIN}) excluding inverter loss.
- For logic power consumption, it is measured under patterns of Note 1.



SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	8 OF 38

3.2 Backlight Unit

< Table 4. LED Backlight Unit >

Parameter		Min.	Typ.	Max.	Unit	Remarks
LED Light Bar Input Voltage Per Input Pin	V _{PIN}	-	63.0	67.6	V	Duty 100%
LED Light Bar Input Current Per Input Pin	I _{PIN}	-	58	61	mA	Note 1,2
LED Power Consumption	P _{BL}	-	14.62	15.69	W	Note 3
LED Life-Time	-	30,000	-	-	Hrs	Note 4

LED bar consists of 92LED packages, 4strings(parallel)*23packages(serial).

Note : 1. There are one light bar ,and the specified current is input LED chip 100% duty current.

2. The sense current of each input pin is 58 mA.

3. The typical power consumption is calculated as $P_{BL}=V_{PIN} (Typ.) * I_{PIN} (Typ.) * \text{No. of strings}$

The maximum power consumption is calculated as $P_{BL}= V_{PIN} (Max.) * I_{PIN} (Typ.) * \text{No. of strings}$.

4. The lifetime is determined as the time at which luminance of LED become 50% of the initial brightness or not normal lighting at I_{PIN}=58mA on condition of continuous operating at 25 ±2 °C.

 www.szguangzhuo.com 广卓液晶 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

4.0 OPTICAL SPECIFICATION

4.1 Overview

The test of Optical specifications shall be measured in a dark room (ambient luminance ≤ 1 lux and temperature = $25\pm 2^{\circ}\text{C}$) with the equipment of Luminance meter system (Goniometer system and TOPCONE PR730) and test unit shall be located at an approximate distance 50cm from the LCD surface at a viewing angle of θ and Φ equal to 0° . We refer to $\theta_{0=0}$ ($=\theta_3$) as the 3 o'clock direction (the “right”), $\theta_{0=90}$ ($=\theta_{12}$) as the 12 o'clock direction (“upward”), $\theta_{0=180}$ ($=\theta_9$) as the 9 o'clock direction (“left”) and $\theta_{0=270}$ ($=\theta_6$) as the 6 o'clock direction (“bottom”). While scanning θ and/or Φ the center of the measuring spot on the Display surface shall stay fixed. The measurement shall be executed after 30 minutes warm-up period. VDD shall be 10.0V $\pm 5\%$ at 25°C . Optimum viewing angle direction is 6 o'clock.

4.2 Optical Specifications

[V_{DD} = 10.0V, Frame rate = 120Hz, Clock = 1088MHz, I_{BL} = 58~4mA, Ta= $25\pm 2^{\circ}\text{C}$]

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle range	Horizontal	Θ_3	CR > 10	85	89	-	Deg.	Note 1
		Θ_9		85	89	-	Deg.	
	Vertical	Θ_{12}		85	89	-	Deg.	
		Θ_6		85	89	-	Deg.	
Luminance Contrast ratio		CR		1050	1500	-	-	Note 2
Luminance of White		Y_w		286	350		cd/m ²	Note 3
White luminance uniformity		ΔY		75	80		%	Note 4
Reproduction of color	White	V_x	$\Theta = 0^\circ$ (Center) Normal Viewing Angle	-0.025	0.313	+0.025	-	Note 5
		W_y			0.329		-	
	Red	R_x			0.675		-	
		R_y			0.322		-	
	Green	G_x			0.301		-	
		G_y			0.614		-	
	Blue	B_x			0.139		-	
		B_y			0.058		-	
Color Temperature				-	6500	-	-	
Color Gamut				95	99	-	-	SRGB@CI E1931
Gamma				2.0	2.2	2.4	-	
Response Time	GTG	T_g			14	20	ms	Note 6

SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	10 OF 38

Note :

- Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface.
- Contrast measurements shall be made at viewing angle of $\theta=0^{\circ}$ and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state. (See FIGURE 1 shown in Appendix) Luminance Contrast Ratio (CR) is defined mathematically.

$$CR = \frac{\text{Luminance when displaying a white raster}}{\text{Luminance when displaying a black raster}}$$

- Center Luminance of white is defined as the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in FIGURE 2 for a total of the measurements per display.
- The White luminance uniformity on LCD surface is then expressed as :
 $\Delta Y = (\text{Minimum Luminance of 9points} / \text{Maximum Luminance of 9points}) * 100$
 (See FIGURE 2 shown in Appendix).
 Typical value of ΔY depends on actual measured value of different model.
- The color chromaticity coordinates specified in Table 4. shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Measurements shall be made at the center of the panel.
- Response time T_g is the average time required for display transition by switching the input signal as below table and is based on Frame rate $f_V=120\text{Hz}$ to optimize. Each time in below table is defined as FIGURE 3 shown in Appendix and shall be measured by switching the input signal for “any level of gray(bright)”and “any level of gray(dark)”.

GTG response time		Rising time				
		0	63	127	191	255
Falling time	0					
	63					
	127					
	191					
	255					

5.0 INTERFACE CONNECTION.

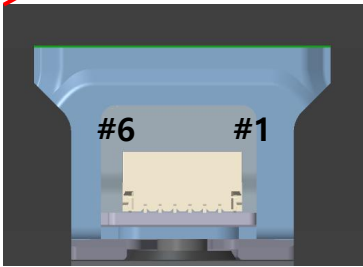
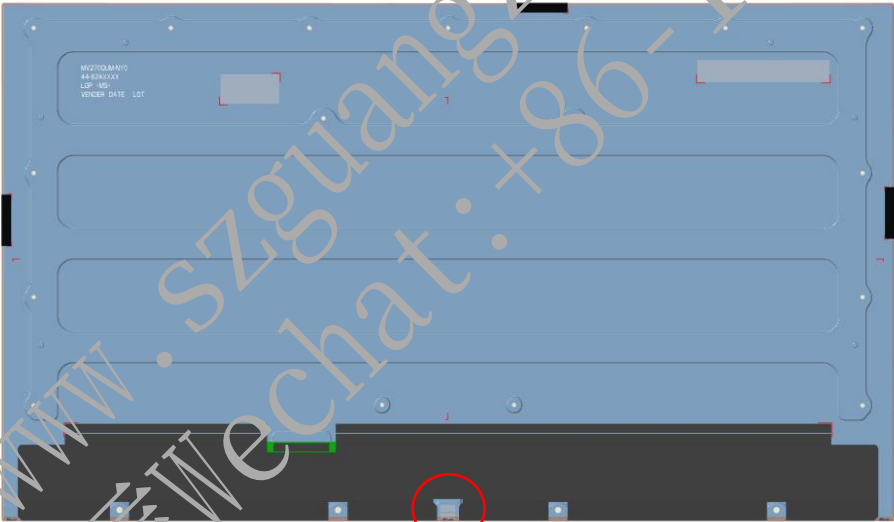
5.1 Electrical Interface Connection

5.1.1 LED Light Bar

-LED connector: A10035WV-H06E(HENGWEI) or A1020AWV-06-C1MA-R(CNJST)

< Table 6. LED Light Bar>

Pin No	Symbol	Description
1	IRLED1	LED current sense for string1
2	IRLED2	LED current sense for string2
3	VLED	LED power supply
4	VLED	LED power supply
5	IRLED3	LED current sense for string3
6	IRLED4	LED current sense for string4



5.1.2 LCD input.

- CN101 Module Side Connector : UJU IS050-C51B-C39-S

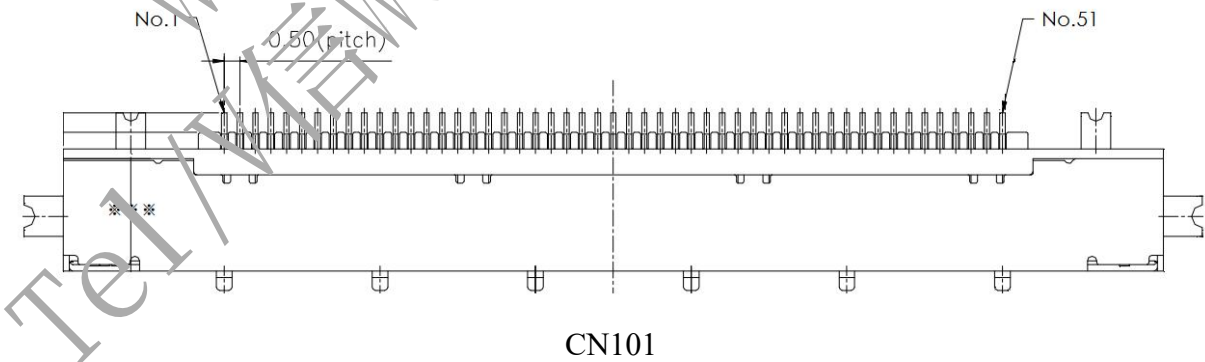
Pin No	Symbol	Function	Remark
1	VDD	Power Supply +10.0V	
2	VDD	Power Supply +10.0V	
3	VDD	Power Supply +10.0V	
4	VDD	Power Supply +10.0V	
5	VDD	Power Supply +10.0V	
6	VDD	Power Supply +10.0V	
7	VDD	Power Supply +10.0V	
8	VDD	Power Supply +10.0V	
9	VDD	Power Supply +10.0V	
10	NC	NC	
11	NC	NC	
12	GND	Ground	Note1
13	NC	NC	
14	NC	No Connection (I2C SDA interface for LCM)	
15	NC	No Connection (I2C SCL interface for LCM)	
16	GND	Ground	
17	GND	Ground	
18	D1_0P	Positive lane 0 Data input(display port 1)	
19	D1_0N	Negative lane 0 Data input(display port 1)	
20	GND	Ground	
21	D1_1P	Positive lane 1 Data input(display port 1)	
22	D1_1N	Negative lane 1 Data input(display port 1)	
23	GND	Ground	
24	D1_2P	Positive lane 2 Data input(display port 1)	
25	D1_2N	Negative lane 2 Data input(display port 1)	
26	GND	Ground	
27	D1_3P	Positive lane 3 Data input(display port 1)	
28	D1_3N	Negative lane 3 Data input(display port 1)	
29	GND	Ground	
30	AUX1N	Master component signal for Auxiliary Channel	
31	AUX1P	Master true signal for Auxiliary Channel	
32	GND	Ground	

5.1.2 LCD input.

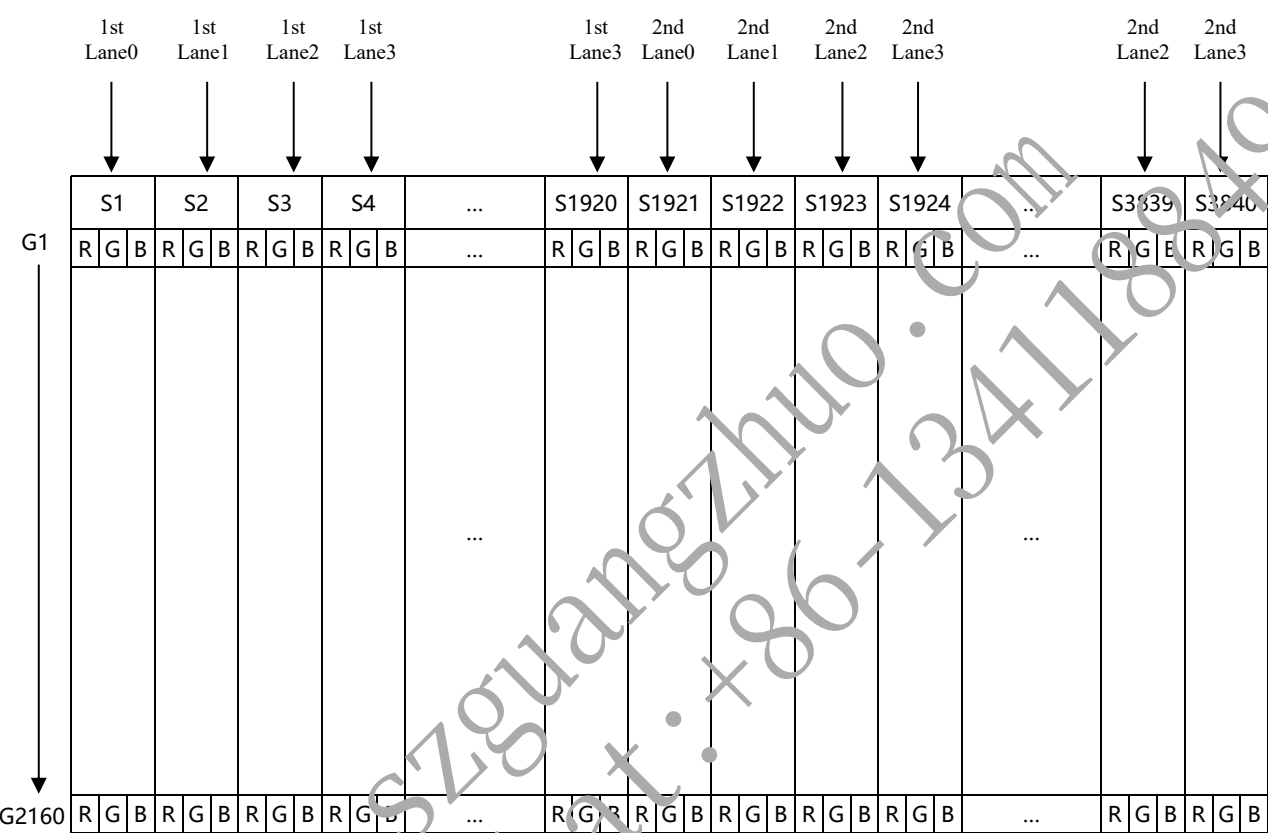
- CN101 Module Side Connector : UJU IS050-C51B-C39-S

Pin No	Symbol	Function	Remark
33	HPD	Hot Plug Detect Signal	
34	GND	Ground	
35	D2_0P	Positive lane 0 Data input(display port 2)	
36	D2_0N	Negative lane 0 Data input(display port 2)	
37	GND	Ground	
38	D2_1P	Positive lane 1 Data input(display port 2)	
39	D2_1N	Negative lane 1 Data input(display port 2)	
40	GND	Ground	
41	D2_2P	Positive lane 2 Data input(display port 2)	
42	D2_2N	Negative lane 2 Data input(display port 2)	
43	GND	Ground	
44	D2_3P	Positive lane 3 Data input(display port 2)	
45	D2_3N	Negative lane 3 Data input(display port 2)	
46	GND	Ground	
47	AUX2N	Slave component signal for Auxiliary Channel	
48	AUX2P	Slave true signal for Auxiliary Channel	
49	GND	Ground	
50	NC	NC	
51	GND	Ground	

Note 1: All GND pin should be connected together with Ground.



5.2.1 eDP Pixel Format



Note:

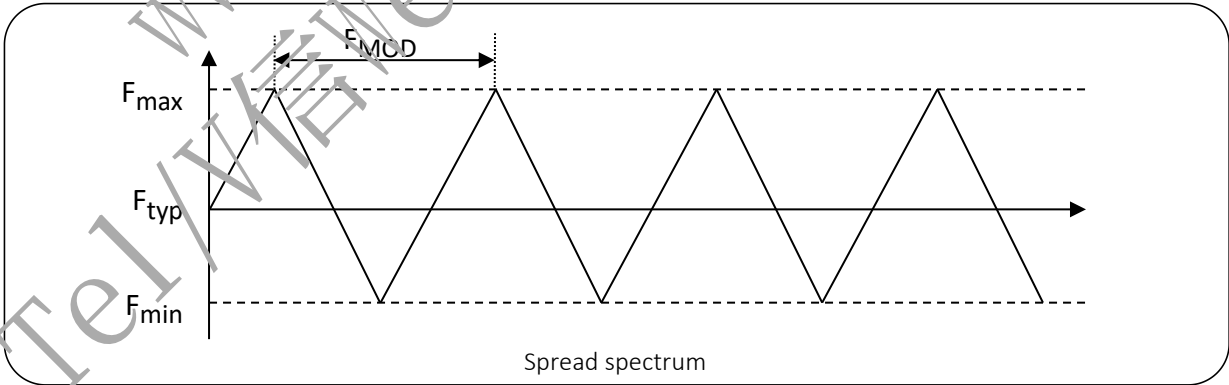
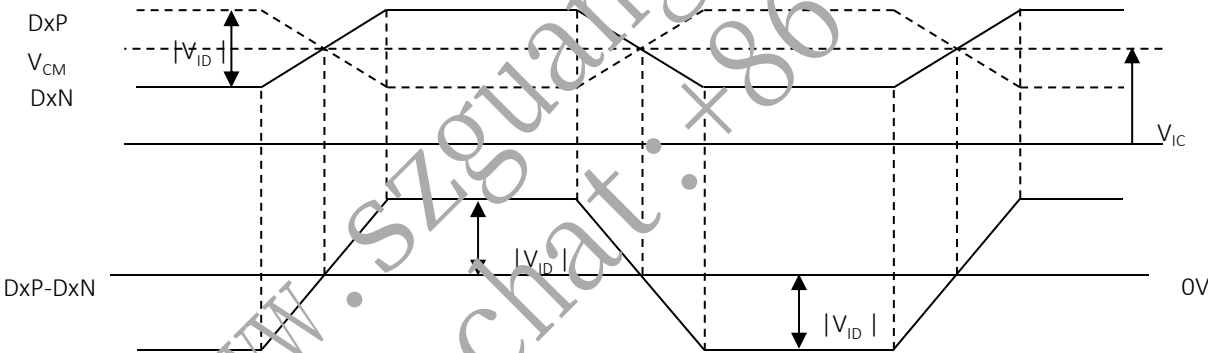
1st Lane0 : 1, 5, ..., 1917 Pixel →4n+1 N=0~479
1st Lane1 : 2, 6, ..., 1918 Pixel →4n+2 N=0~479
1st Lane2 : 3, 7, ..., 1919 Pixel →4n+3 N=0~479
1st Lane3 : 4, 8, ..., 1920 Pixel →4n+4 N=0~479

2nd Lane0 : 1921, 1925, ..., 3837 Pixel →4n+1281 N=0~479
2nd Lane1 : 1922, 1926, ..., 3838 Pixel →4n+1282 N=0~479
2nd Lane2 : 1923, 1927, ..., 3839 Pixel →4n+1283 N=0~479
2nd Lane3 : 1924, 1928, ..., 3840 Pixel →4n+1284 N=0~479

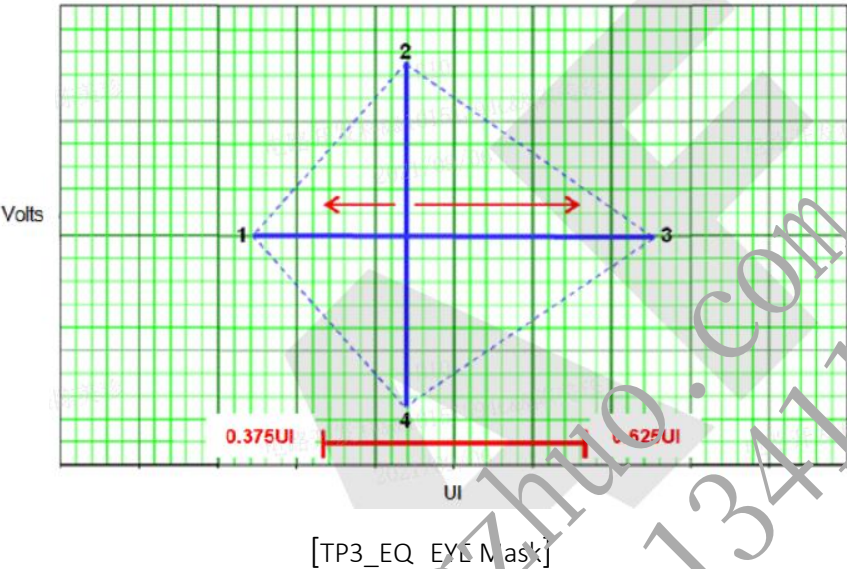
5.3 eDP Rx Interface Timing Parameter

5.3.1 Main link Signal

Item	Symbols	Min	Typ	Max	Unit	Remark
Spread spectrum clock	SSC	-0.5	-	+0	%	
Module Frequency	FMOD	30	-	33	KHz	
Main link swing voltage	$ V_{ID} $	50	-	660	mv	
Main link common mode voltage	V_{IC}	0	-	2.0	V	



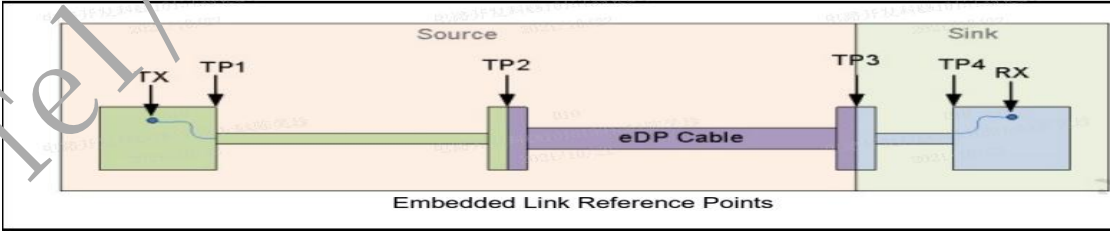
5.3.2 Main Link Eye Diagram



Point	HBR2@ TP3_EQ EYE Mask Vertices	Voltage(V)
1	Any UI location(x),where the EYE width is open from x to x+0.38UI	0.0000
2	Any passing UI location between 0.375 and 0.625UI	0.0375
3	Point 1+0.38UI	0.0000
4	Same as Point 2	-0.0375

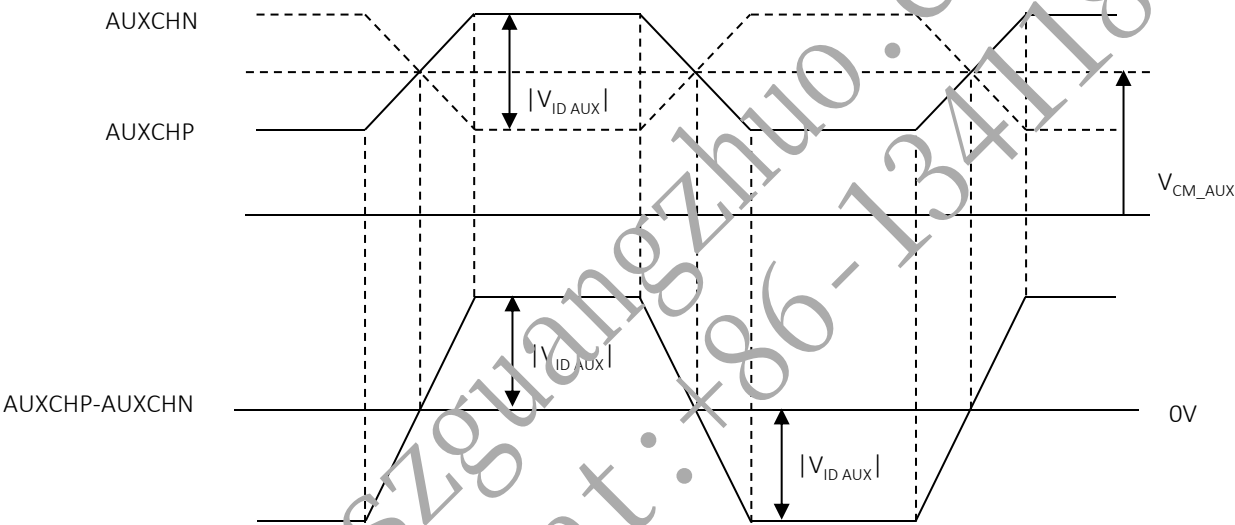
[eDP TP3_EQ EYE Mask Vertices]

Remark: TP3_EQ-After Reference RX Equalizer



5.3.3 AUX_CH Signal

Item	Symbols	Min	Typ	Max	Unit	Remark
AUX Main link swing voltage	$ V_{ID\ AUX} $	0.135	-	0.680	V	
AUX DC common mode voltage	V_{CM_AUX}	0	-	2	V	



5.3.4 HDP Signal

Item	Symbols	Min	Typ	Max	Unit	Remark
HPD Voltage	VHPD	2.25	-	3.6	V	Sink side Driving

6.0 SIGNAL TIMING SPECIFICATION

6.1 The MV270QUM-NY0 is operated by the DE only.

Item	Symbols		Min	Typ	Max	Unit	Note
DCLK	Frequency	-	426.09	543.9	915.65	MHz	
Hsync	Period	tHP	4000	4080	4140	tCLK	
	Horizontal Valid	tHV	3840			tCLK	
	Horizontal Blank	tHB	160	240	300	tCLK	
Vsync	Period	tVP	2200	2222	4720	tHP	
	Vertical Valid	tVV	2160			tHP	
	Vertical Blank	tVB	40	62	2560	tHP	
	Frequency	fV	47	60	101	Hz	

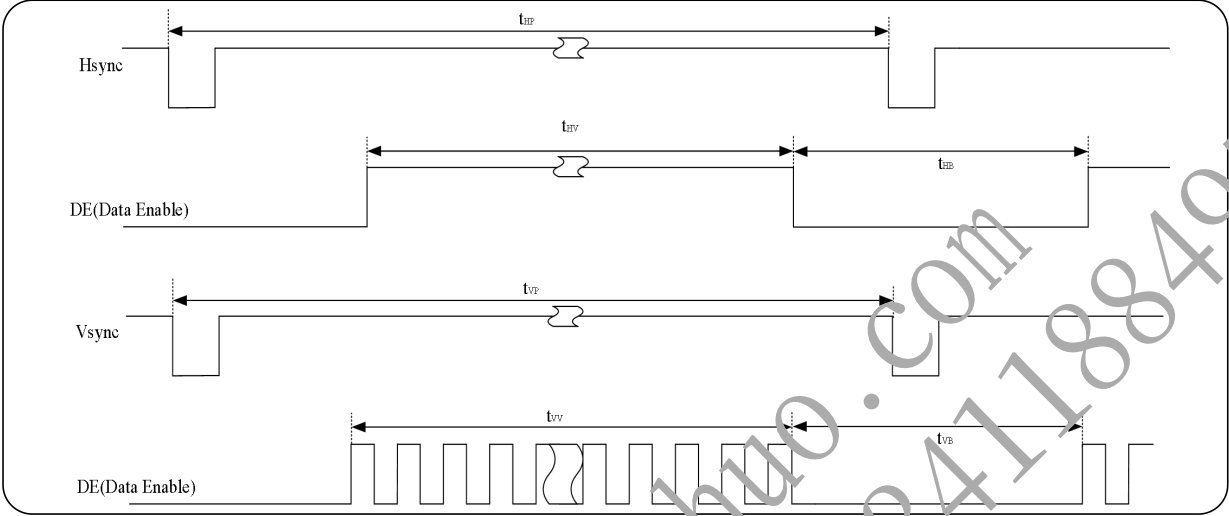
100Hz Product Timing Specifications

Item	Symbols		Min	Typ	Max	Unit	Note
DCLK	Frequency	-	426.09	543.9	1099	MHz	
Hsync	Period	tHP	4000	4080	4140	tCLK	
	Horizontal Valid	tHV	3840			tCLK	
	Horizontal Blank	tHB	160	240	300	tCLK	
Vsync	Period	tVP	2200	2222	5717	tHP	
	Vertical Valid	tVV	2160			tHP	
	Vertical Blank	tVB	40	62	3557	tHP	
	Frequency	fV	47	60	121	Hz	

120Hz Product Timing Specifications

BOE www.szguangzhuo.com 广卓液晶 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

6.2 SIGNAL TIMING WAVEFORMS



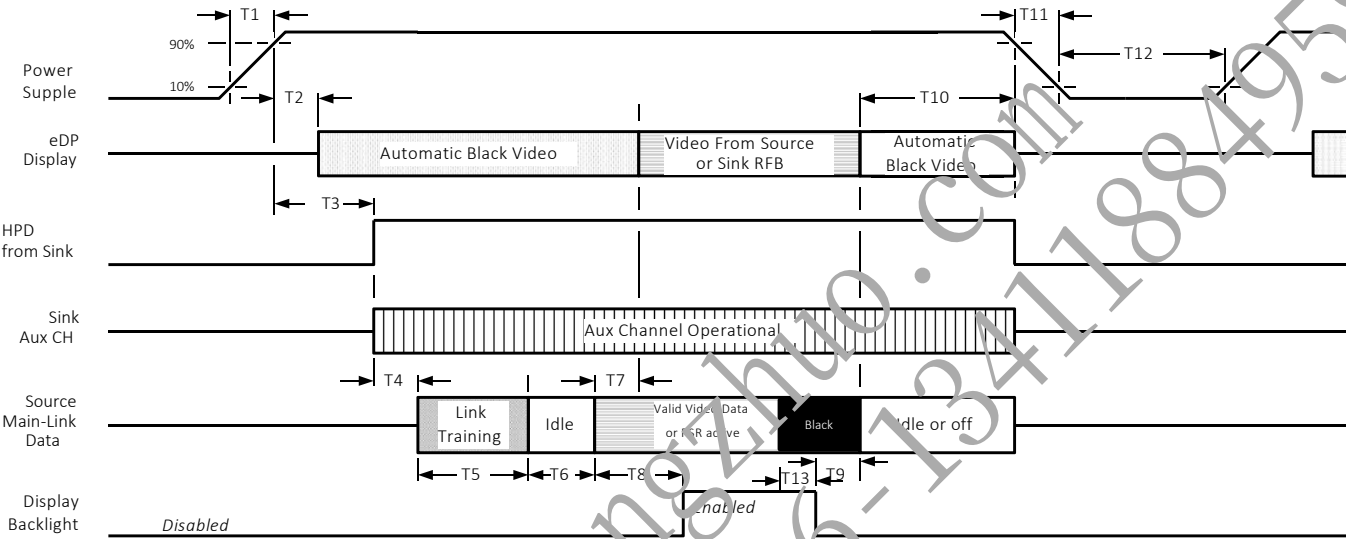
SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	21 OF 38

7.0 INPUT SIGNALS, BASIC DISPLAY COLORS & GRAY SCALE OF COLORS

Color	Gray Level	RED										GREEN										BLUE									
		R9	R8	R7	R6	R5	R4	R3	R2	R1	R0	G9	G8	G7	G6	G5	G4	G3	G2	G1	G0	B9	B8	B7	B6	B5	B4	B3	B2	B1	B0
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	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	1	1	1
L511	-	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
Red	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	0	0	0	0
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	1023	1	1	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	0
Green	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	0	0	0	0
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	1023	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	1023	0	0	0	0	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

8.0 POWER SEQUENCE

To prevent a latch-up or DC operation of the LCD module, the power on/off sequence shall be as shown in below.



Timing Parameter	Description	Required By	Limits		Notes
			Min	Max	
T1	Power rail rise time, 10% to 90%	Source	0.5ms	10ms	
T2	Delay from Power Supply to automatic Black Video generation	Sink	0ms	120ms	Automatic Black Video generation prevents display noise until valid video data is received from the Source
T3	Delay from Power Supply to HPD high	Sink	0ms	120ms	Sink AUX Channel must be operational upon HPD high
T4	Delay from HPD high to link training initialization	Source	-	-	Allows for the Source to read Link capability and initialize
T5	Link training duration	Source	-	-	Dependant on the Source link training protocol
T6	Link idle	Source	-	-	Min accounts for required BS-Idle Pattern. Max allows for Source frame synchronization.

T7	Delay from valid video data from Source to video on display	Sink	0ms	50ms	Max value allows for the Sink to validate video data and timing. At the end of T7, the Sink will indicate the detection of valid video data by setting the SINK_STATUS bit to logic 1 (DPCD 00205h, bit 0), and the Sink will no longer generate automatic Black Video.
T8	Delay from valid video data from Source to backlight enable	Source	-	-	The Source must assure display video is stable
T9	Delay from backlight disable to end of valid video data	Source	200ms	-	The Source must assure backlight is no longer illuminated. At the end of T9, the Sink will indicate the detection of no valid video data by setting the SINK_STATUS bit to logic 0 (DPCD 00205h, bit 0), and the Sink will automatically display Black Video.
T10	Delay from end of valid video data from Source to power off	Source	0ms	500ms	
T11	Power rail fall time, 90 to 10%	Source	-	-	
T12	Power off time	Source	500ms	-	
T13	Black pattern display time before backlight disable	Source	20ms	-	

- Notes:
- 1. When the power supply VDD is 0V, keep the level of input signals on the low or keep high impedance.
 - 2. Do not keep the interface signal high impedance when power is on.
 - 3. Back Light must be turn on after power for logic and interface signal are valid.
 - 4. T11 decreases smoothly, there is none re-bouncing voltage.
 - 5. Applied KSF LED, need insert the black pattern, and the time (T13) should be more than 20ms

BOE www.szguangzhuo.com 广卓液晶屏 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

9.0 MECHANICAL CHARACTERISTICS

9.1 Dimensional Requirements

FIGURE 6 (located in Appendix) shows mechanical outlines for the model MV270QUM-NY0.
Other parameters are shown in Table 7.

<Table 7. Dimensional Parameters>

Parameter	Specification	Unit
Dimensional outline	608.8(H) *352.4(V) *11.2(D) (Typ.)	mm
Thickness	11.2 (Bottom) / 6.7(Top)	mm
Weight	(2800) (Typ.) / +5% (Max)	gram
Active area	596.736(H) × 335.664(V) mm	mm
Bezel width (L/R/U/D)	6.03/6.03/6.02/10.72mm. (A-A-Module outline)	mm
Surface Treatment	Haze 25%, 3H	-
Deco gloss	8±3GU	-
Pixel pitch	0.1554(H) x 0.1554(V) mm	mm
Number of pixels	3840 (H)×2160 (V) (1 pixel = R + G + B dots)	pixels
Back-light	Horizontal arranged, 1-LED Lighting Bar type	

9.2 Mounting

See FIGURE 5. (shown in Appendix)

9.3 Anti-Glare and Polarizer Hardness.

The surface of the LCD has an anti-glare coating to minimize reflection and a coating to reduce scratching.

9.4 Light Leakage

There shall not be visible light from the back-lighting system around the edges of the screen as seen from a distance 50cm from the screen with an overhead light level of 350lux.

9.5 Tilt/Pivot usage

Guarantee No panel peel off / No abnormal display (functionality issue) / NO FOS (light leakage / mura) issue at arm usage (tilt -35° ~ 80°, Pivot -180° ~ 180°), 30khrs @ static office circumstances, room temp/room humidity)

SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	25 OF 38

10.0 RELIABLITY TEST

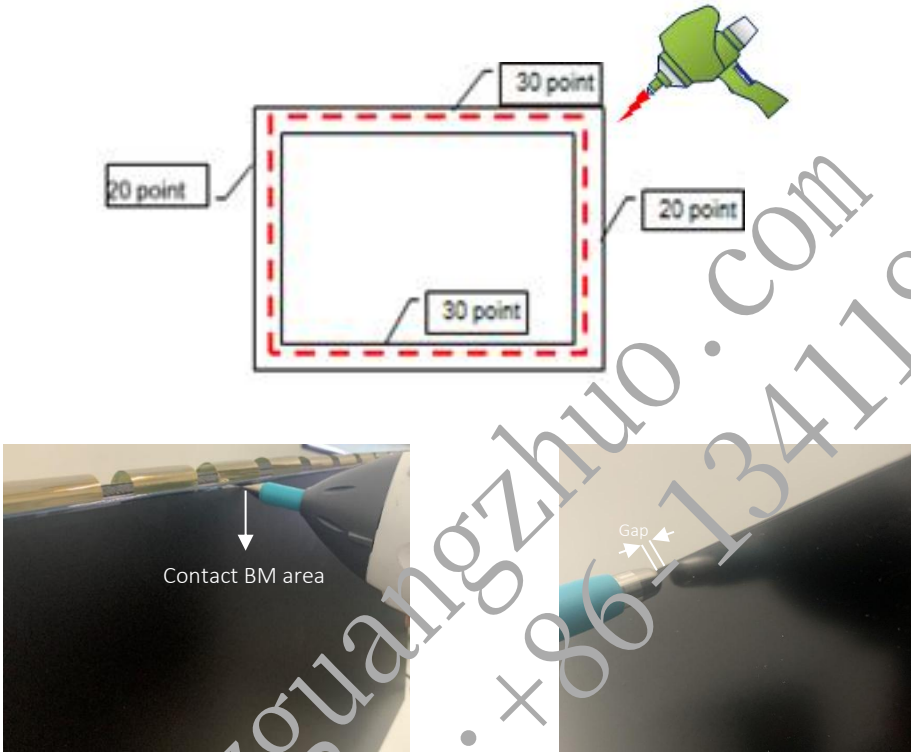
The Reliability test items and its conditions are shown in below.

<Table 8. Reliability Test Parameters >

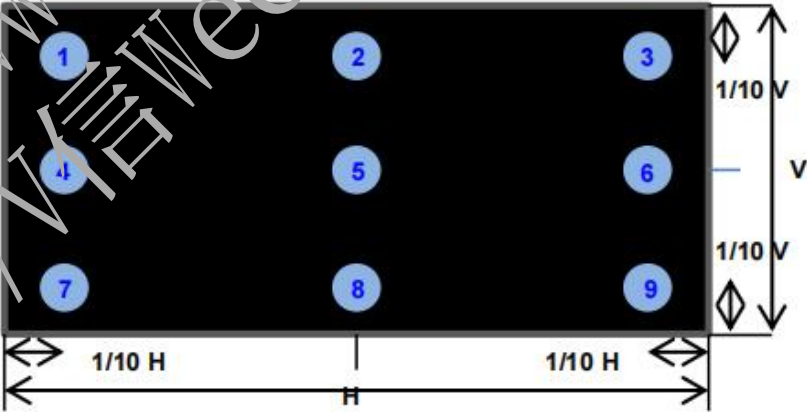
No	Test Items	Conditions	
1	High temperature storage test	Ta = 60 °C, 240 hrs	
2	Low temperature storage test	Ta = -20 °C, 240 hrs	
3	High temperature & high humidity operation test	Ta = 50 °C, 80%RH, 240hrs	
4	High temperature & high humidity storage test	Ta = 60 °C, 90%RH, 240 hrs	
5	High temperature operation test	Ta = 50 °C, 240hrs	
6	Low temperature operation test	Ta = 0°C, 240hrs	
7	Thermal shock	Ta = -20 °C ↔ 60 °C (per 0.5 hr), 100 cycle	
8	Vibration test (non-operating)	Frequency	Random,10 ~ 300 Hz, 30 min/Axis
		Gravity\ AMP	1.0 Grms
		Period	X, Y, Z 30 min
9	Shock test (non-operating)	Gravity	50G
		Pulse width	11msec, Half sine wave
		Direction	±X, ±Y, ±Z Once for each
10	Electro-static discharge test	Air : 150 pF, 330Ω, 15 KV Contact : 150 pF, 330Ω, 8 KV	
11	On/off test	10sec on / 5sec off , 30000times	

BOE www.szguangzhuo.com 广卓液晶 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

Note :
1. ESD test point:



2. Panel push test point:



SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	24 OF 38

 www.szguangzhuo.com 广卓液晶屏 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

11.0 HANDLING & CAUTIONS

- (1) Cautions when taking out the module
 - Pick the pouch only, when taking out module from a shipping package.
- (2) Cautions for handling the module
 - As the electrostatic discharges may break the LCD module, handle the LCD module with care. Peel a protection sheet off from the LCD panel surface as slowly as possible.
 - As the LCD panel and back - light element are made from fragile glass material, impulse and pressure to the LCD module should be avoided.
 - As the surface of the polarizer is very soft and easily scratched, use a soft dry cloth without chemicals for cleaning.
 - Do not pull the interface connector in or out while the LCD module is operating.
 - Put the module display side down on a flat horizontal plane.
 - Handle connectors and cables with care.
- (3) Cautions for the operation
 - When the module is operating, do not lose CLK, ENAB signals. If any one of these signals is lost, the LCD panel would be damaged.
 - Obey the supply voltage sequence. If wrong sequence is applied, the module would be damaged.
 - Ultra-violet ray filter is necessary for outdoor operation
 - If the product will be used in extreme conditions such as high temperature, humidity, display patterns, operation time, etc., it is strongly recommended to contact BOE for application engineering device. Otherwise, the reliability and function of the module may not be guaranteed. Extreme conditions are commonly found at airports, transit stations, banks, stocks, markets, and controlling systems.
- (4) Cautions for the storage
 - When storing product as spares for a long time, LCD panels should be kept from direct light, moisture, and prevent water condensing.
 - Ventilate the warehouse with effectively with proper ventilation system. Temperature should between 5°C and 35°C at normal humidity(≤ 75%).
 - Product should be kept in storage no more than 6months. If products has been stored over 3 months, it is recommended to return to temperature of 20°C and humidity of 50% for 24hours.

SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	28 OF 38

BOE	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12
(5) Cautions for the atmosphere Dew drop atmosphere should be avoided. Do not store and/or operate the LCD module in a high temperature and/or humidity atmosphere. Storage in an electro-conductive polymer packing pouch and under relatively low temperature atmosphere is recommended. (6) Cautions for the module characteristics Do not apply fixed pattern data signal to the LCD module at product aging. Applying fixed pattern for a long time may cause image sticking. (7) Other cautions Do not disassemble and/or re-assemble LCD module. Do not re-adjust variable resistor or switch etc. When returning the module for repair or etc., Please pack the module not to be broken. We recommend to use the original shipping packages When this reverse model is used as a forward-type model (PCB on top side), BOE can not guarantee any defects of LCM. If LCD module containing system is out of BOE 's operating or storing condition, BOE can not guarantee LCD module operating properly.			
SPEC. NUMBER	SPEC. TITLE	PAGE	
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	29 OF 38	

DBG-RD-MNT-2023003-C

A4(210 X 297)

	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

12.0 INTERNATIONAL STANDARDS

<Safety standard>

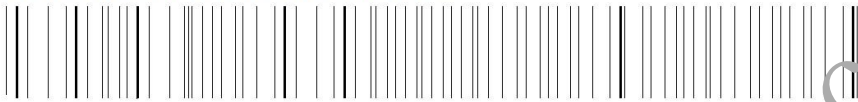
- a) IEC 62368-1, The International Electro-technical Commission(IEC).
Audio/video, Information and Communication Technology Equipment - Safety - Safety Requirements
- b) EN 62368-1, European Committee for Electro-technical Standardization (CENELEC)
Audio/video, Information and Communication Technology Equipment - Safety Requirements
- c) UL 62368-1, UL LLC.
Audio/video, Information and Communication Technology Equipment - Safety Requirements
- d) CAN/CSA C22.2 No.62368-1, Canadian Standards Association (CSA).
Audio/video, Information and Communication Technology Equipment - Safety Requirements
- e) IEC 60950-1, The International Electro technical Commission (IEC).
Information Technology Equipment - Safety - Part 1 : General Requirements

<Environment standard>

- a) EU RoHS, COMMISSION DELEGATED DIRECTIVE (EU) 2015/863 of 31 March 2015

SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QM-NY0 Product Final Specification Ver.O	30 OF 38

13.0 PRODUCT SERIAL NUMBER

MV270QUM-NY0 BA
DP/N XXXXXX
XXXX REV A00
XXXXXXXXXXXXXXXXXXXX


BOE



c



US

MADE IN CHINA



Digit	1		2	3	4		5	6					7				
Code	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Des.	1. Control Number 2. Rank/Grade 3. Line Classification 4. Year(2001:01, 2002:02, ...) 5. Month(1, 2, 3, ..., 9 X, Y, Z) 6. Internal Use 7. Serial Number																

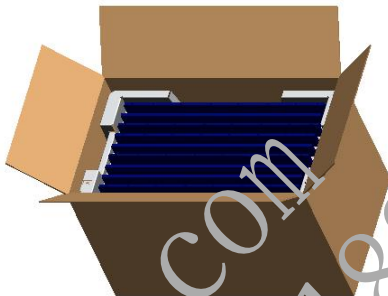
BOE www.szguangzhuo.com 广卓液晶屏 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

14.0 PACKING

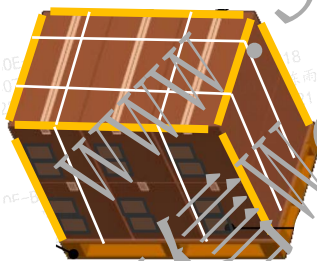
14.1 Packing Order



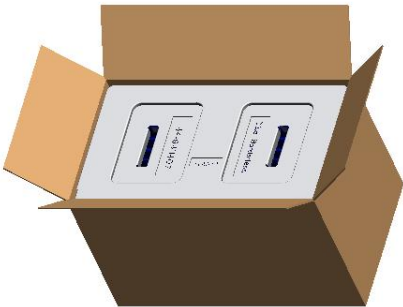
Put 1 EPS bottom into the inner box.



Put each module into a PE bag.
Insert 10 Pcs MDL into each box



Place paper corners and wrap film around the boxes.
Pack with 4 packing belts.



Put 1 EPS cover in and seal the box.

SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	32 OF 38

	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

14.2 Packing Note

- Box Dimension : 710mm(L) × 365mm(W) × 448mm(H)
- Package Quantity in one Box : 10 pcs

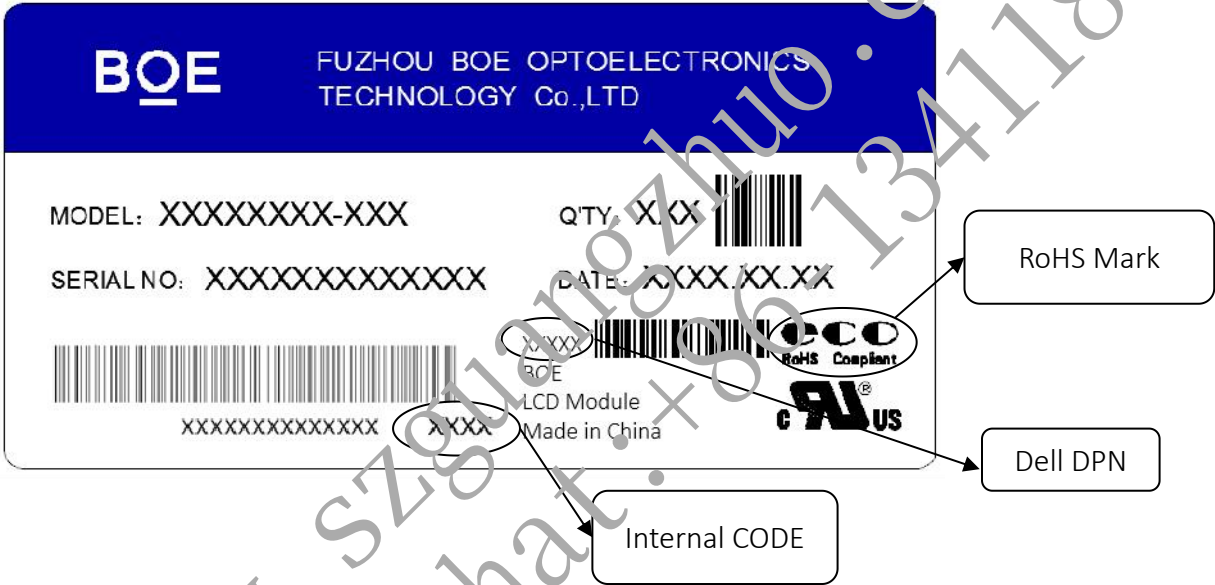
14.3 Packing information

Item	Specification	Unit
Box weight(including panels)	32.5	Kg
Box Q'ty in pallet	6	ea
Panel Q'ty in pallet	60	ea
Pallet dimension	114*74*102.6	Cm
Pallet weight	17	Kg
Stack layer I pallet	2	-

SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	35 OF 38

14.4 Box label

- Label Size : 100 mm (L) × 50 mm (W)
- Contents
 - Model : MV270QUM-NY0
 - Q`ty : Module 10 Q`ty in one box
 - Serial No. : Box Serial No. See next page for detail description.
 - Date : Packing Date
 - FG Code : FG Code of Product



Digit	1	2	3	4	5	6	7					
Code	x	x	x	x	x	x	x	x	x	x	x	x
Des.	1. Model Code GBN 2. Grade 3. Line 4. Year(2016:16, 2017:17, ...) 5. Month(1, 2, 3, ..., 9, X, Y, Z) 6. Revision Code 7. Serial Number											

BOE www.szguangzhuo.com 广卓液晶屏 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

15.0 APPENDIX

Figure 1. Measurement Set Up

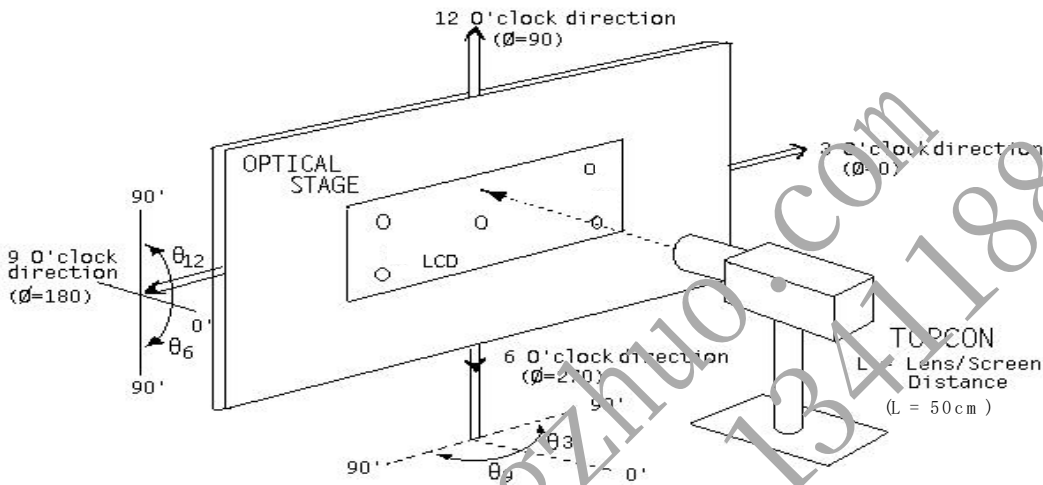
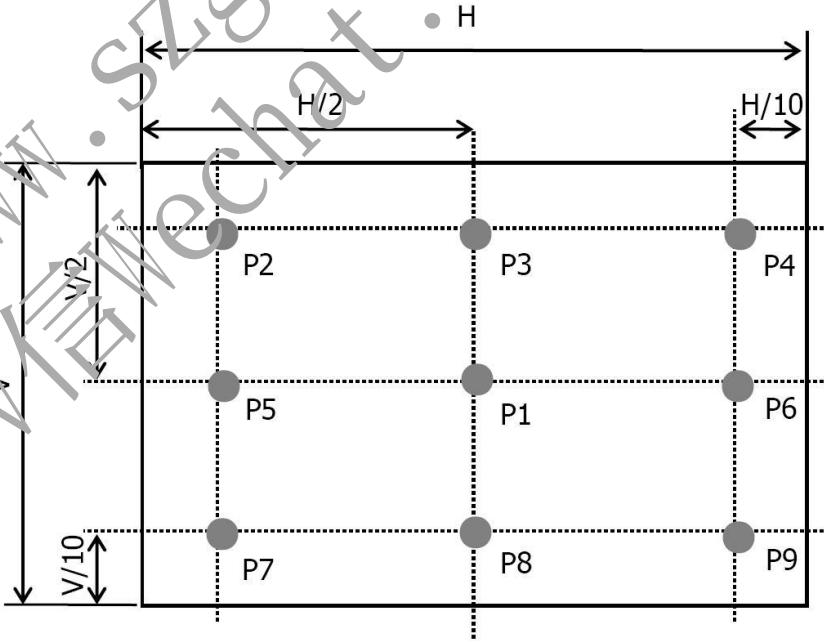


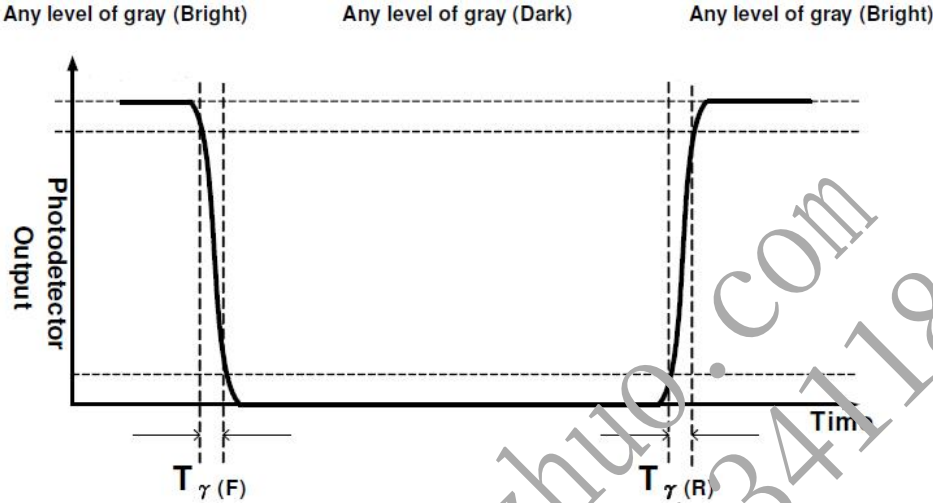
Figure 2. White Luminance and Uniformity Measurement Locations (9 points)



SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	35 OF 38

 www.szguangzhuo.com 广卓液晶 echodeng61@hotmail.com jimei@jimeihk.com +86-13411884959	PRODUCT GROUP	REV	ISSUE DATE
	TFT- LCD PRODUCT	Ver.O	2024.11.12

Figure 3. Response Time Testing



SPEC. NUMBER	SPEC. TITLE	PAGE
S8-64-8D-477	B10 MV270QUM-NY0 Product Final Specification Ver.O	36 OF 38

11.2±0.5

The figure contains three technical drawings of connector sections, each with a table of dimensions and tolerances.

Section A-A (S (1/1))

Total Specs
1.7
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.1
0.05
0.02
0.01
0.005
0.002
0.001
0.0005
0.0002
0.0001
0.00005
0.00002
0.00001
0.000005
0.000002
0.000001
0.0000005
0.0000002
0.0000001
0.00000005
0.00000002
0.00000001
0.000000005
0.000000002
0.000000001
0.0000000005
0.0000000002
0.0000000001
0.00000000005
0.00000000002
0.00000000001
0.000000000005
0.000000000002
0.000000000001
0.0000000000005
0.0000000000002
0.0000000000001
0.00000000000005
0.00000000000002
0.00000000000001
0.000000000000005
0.000000000000002
0.000000000000001
0.0000000000000005
0.0000000000000002
0.0000000000000001
0.00000000000000005
0.00000000000000002
0.00000000000000001
0.000000000000000005
0.000000000000000002
0.000000000000000001
0.0000000000000000005
0.0000000000000000002
0.0000000000000000001
0.00000000000000000005
0.00000000000000000002
0.00000000000000000001
0.000000000000000000005
0.000000000000000000002
0.000000000000000000001
0.0000000000000000000005
0.0000000000000000000002
0.0000000000000000000001
0.00000000000000000000005
0.00000000000000000000002
0.00000000000000000000001
0.000000000000000000000005
0.000000000000000000000002
0.000000000000000000000001
0.0000000000000000000000005
0.0000000000000000000000002
0.0000000000000000000000001
0.00000000000000000000000005
0.00000000000000000000000002
0.00000000000000000000000001
0.000000000000000000000000005
0.000000000000000000000000002
0.000000000000000000000000001
0.0000000000000000000000000005
0.0000000000000000000000000002
0.0000000000000000000000000001
0.00000000000000000000000000005
0.00000000000000000000000000002
0.00000000000000000000000000001
0.000000000000000000000000000005
0.000000000000000000000000000002
0.000000000000000000000000000001
0.0000000000000000000000000000005
0.0000000000000000000000000000002
0.0000000000000000000000000000001
0.00000000000000000000000000000005
0.00000000000000000000000000000002
0.00000000000000000000000000000001
0.000000000000000000000000000000005
0.000000000000000000000000000000002
0.000000000000000000000000000000001
0.0000000000000000000000000000000005
0.0000000000000000000000000000000002
0.0000000000000000000000000000000001
0.00000000000000000000000000000000005
0.00000000000000000000000000000000002
0.00000000000000000000000000000000001
0.000000000000000000000000000000000005
0.000000000000000000000000000000000002
0.000000000000000000000000000000000001
0.0000000000000000000000000000000000005
0.0000000000000000000000000000000000002
0.0000000000000000000000000000000000001
0.00000000000000000000000000000000000005
0.00000000000000000000000000000000000002

