



Version	0.1
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# Product Specification

## 8" color TFT-LCD module

MODEL NAME: C080VW02 V0

- ( ☒ ) Draft Specification
- ( ☐ ) Preliminary Specification
- ( ☐ ) Final Specification

Note: The content of this specification is subject to change without prior inform

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## Record of Revision

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## Appendix:

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## A. Physical specifications

NO	Item	Specification	Remark
1	Display resolution (dot)	800RGB(W)×480(H)	
2	Active area (mm)	175.20(W)×105.12(H)	
3	Screen size (inch)	8.0(Diagonal)	
4	Pixel pitch (mm)	0.073(W)×3x0.219(H)	
5	Color configuration	R. G. B. stripe	
6	Overall dimension (mm)	186.5(W)×117.12(H)×5.4(D)	Note 1
7	Weight (g)	TBD	
8	Surface treatment	AG with SWV film	
9	Backlight unit	LED	

Note 1: Refer to Fig.1 outline dimension drawing

## B. Electrical specifications

### 1. Pin assignment

#### a.) TFT-LCD panel driving section

Pin no	Symbol	I/O	Description	Remark
1	GND	P	Digital ground for source driver	
2	VCOM	I	VCOM voltage	
3	DIO1	I/O	Start pulse signal input/output (Horizontal)	
4	GND	P	Digital ground for source driver	
5	VCC(DVDD)	P	Digital voltage for source driver	
6	EDGSL	I	Clock edge selected, raising/falling edges	
7	DCLK	I	CLK (Vertical)	
8	LR	I	Right or Left display control	
9	RO	I	Red data	
10	R1	I	Red data	
11	R2	I	Red data	
12	R3	I	Red data	
13	R4	I	Red data	
14	R5	I	Red data	
15	G0	I	Green Data	
16	G1	I	Green Data	
17	G2	I	Green Data	
18	G3	I	Green Data	
19	G4	I	Green Data	
20	G5	I	Green Data	
21	AVDD	P	Analog voltage for source driver	
22	V1	I	Gamma correction reference voltage	
23	V2	I	Gamma correction reference voltage	
24	V3	I	Gamma correction reference voltage	
25	V4	I	Gamma correction reference voltage	
26	V5	I	Gamma correction reference voltage	
27	V6	I	Gamma correction reference voltage	
28	V7	I	Gamma correction reference voltage	
29	V8	I	Gamma correction reference voltage	
30	V9	I	Gamma correction reference voltage	
31	V10	I	Gamma correction reference voltage	
32	V11	I	Gamma correction reference voltage	
33	V12	I	Gamma correction reference voltage	
34	V13	I	Gamma correction reference voltage	
35	V14	I	Gamma correction reference voltage	
36	AVSS	P	Analog ground for source driver	
37	B0	I	Blue Data	
38	B1	I	Blue Data	
39	B2	I	Blue Data	
40	B3	I	Blue Data	
41	B4	I	Blue Data	
42	B5	I	Blue Data	
43	LD	I	Latch and switch data to output	

44	REV	I	Control data are inverted or not	
45	POL	I	Polarity selection	
46	VCC(DVDD)	P	Digital voltage for source driver	
47	GND	P	Digital ground for source driver	
48	CHNSL	I	Select source channel output number (Must set to High)	
49	AVDD	P	Analog voltage for source driver	
50	DIO2	I/O	Start pulse signal input/output (Horizontal)	
51	VCOM	I	VCOM voltage	
52	OEVS	I	Output enable	
53	UD	I	Up or Down display control	
54	CKV	I	CLK (Vertical)	
55	STVU	I/O	Start pulse signal input/output (Vertical)	
56	STVD	I/O	Start pulse signal input/output (Vertical)	
57	VGH	P	TFT high voltage	
58	VGL	P	TFT low voltage	
59	VCC	P	Digital voltage for gate driver	
60	GND	P	Ground for gate driver	

## b). Backlight driving section

No.	Symbol	I/O	Description	Remark
1	HI	I	Power supply for backlight unit (High voltage)	--
2	GND	-	Ground for backlight unit	--

## 2. Absolute Maximum Ratings

Items	Symbol	Product Specification			Unit
		Min.	Typ.	Max.	
Power Voltage	Vcc	-0.5		5	V
	AVDD	-0.5		12	V
	VGH	-0.3		18	V
	VGL	-15		0.3	V
	VGH-VGL			33	V
Input Signal Voltage	Vi	-0.3		Vcc+0.3	V
	Vref(V1~V5)	0.4AVDD		AVDD+0.3	V
	Vref(V6~V10)	-0.3		0.6AVDD	V
	VCOM		4.2		V
Operating Temperature	Topa	-30		85	□
Storage Temperature	Tstg	-40		85	□
LED	VL			22	V
	IL			--	mA

### 3. Typical operating conditions (GND=AVSS=0V)

Items	Symbol	Product Specification			Unit
		Min.	Typ.	Max.	
Power Voltage	VCC	3.0	3.3	3.6	V
	AVDD	9.7	9.8	9.9	V
	VGH	14.0	15.0	16.0	V
	VCOM	4.0	4.2	4.4	V
	VGL	-13	-12	-11	V
Input Reference Voltage	V1~V5	0.4AVDD	—	AVDD-0.1	V
	V6~V10	0.1	—	0.6AVDD	V
Input H/L level Voltage	VIH	0.8VCC	—	VCC	V
	VIL	0	—	0.2VCC	V

### 4. Current consumption conditions(GND=AVSS=0V)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Current For Driver	IGH	VGH=15V		100	150	uA
	IGL	VGL=-12V		-100	-150	uA
	ICC	VCC=3.3V		3.5	5	mA
	IDD	AVDD=9.8V		20	30	mA

### 5. Backlight driving conditions

Parameter	Symb	Min.	Typ.	Max.	Unit	Remark
LED current	I <sub>L</sub>		150		mA	Single
LED voltage	V <sub>L</sub>		20	22	V	Single
LED Life Time	L <sub>L</sub>	10000			Hrs	

### 6. Timing conditions

#### a. AC Electrical Characteristics (VCC=3.3V, AVDD=8.8V, AVSS=GND=0V, TA=25□)

Parameter	Symbol	Min.	Typ.	Max.	Unit
CLK frequency	Fclk		40	42	MHz
CLK pulse width	TCW	6			ns
Data set-up time	Tsu	4			ns
Data hold time	Thd	2			ns
Propagation delay of DIO2/1	Tphl	6	10	15	ns
Time that the last data to LD	Tld	1			Tcw
Pulse width of LD	Twld	2			Tcw
Time that LD to DIO1/2	Tlds	5			Tcw
POL set-up time	Tpsu	6			ns
POL hold time	Tphd	6			ns
OEV pulse width	TOEV		12		Tcw
CKV pulse width	TCKV	16	28	40	Tcw
Horizontal display start	TSH		0		Tcw/3
Horizontal display timing	TDH		800		Tcw/3

range					
STV setup time	TSUV	400			ns
STV hold time	THDV	400			ns
STV pulse width	TSTV			1	TDH
Horizontal lines per field	TV	512	525	610	TDH
Vertical display start	TSV		3		TDH
Vertical display timing range	TDV		480		TDH

## b. DC Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	2.7	3.3	3.6	V
Low Level Input Voltage	Vil	0	-	0.3*Vcc	V
High Level Input Voltage	Vih	0.7*Vcc	-	Vcc	V
High Level Output Voltage	Voh	Vcc-0.4	-	-	V
Low Level Output Voltage	Vol	GND	-	GND+0.4	V
Supply Voltage	AVDD	8.6	8.8	9.0	V
Sinking Current of Outputs	IOL	-80	-	-	uA
Driving Current of Outputs	IOH	80	-	-	uA

Note 1: Due to panel is a passive component and no leakage current request for better performance, it's may need extra circuit to make sure the TFT LCD panel storage capacitor's shorter discharge time when system power off. Customers should study the discharge circuit according themselves system design.

## C. Optical specification (Note 1, Note 2)

Item	Symb	Condition	Min.	Typ.	Max.	Unit	Remark
Response time	Rise Fall	$\theta=0^\circ$	- -	10 6		ms ms	Note 3
Contrast ratio	CR	At optimized Viewing angle	200	300	-		Note 4
Viewing angle	Top Bottom Left Right	CR $\geq$ 10	30 50 50 50	40 60 60 60	- - - -	deg.	Note 4
Brightness	Y <sub>L</sub>	I <sub>L</sub> =150mA, 25 $\square$	400		-	nit	Note 5
White chromaticity	x	$\theta=0^\circ$	0.26	0.31	0.36		Note 5
	y	$\theta=0^\circ$	0.28	0.33	0.38		

Note 1 : Ambient temperature =25 $\square$ , and lamp current I<sub>L</sub> = 6 mArms. To be measured in the dark room.

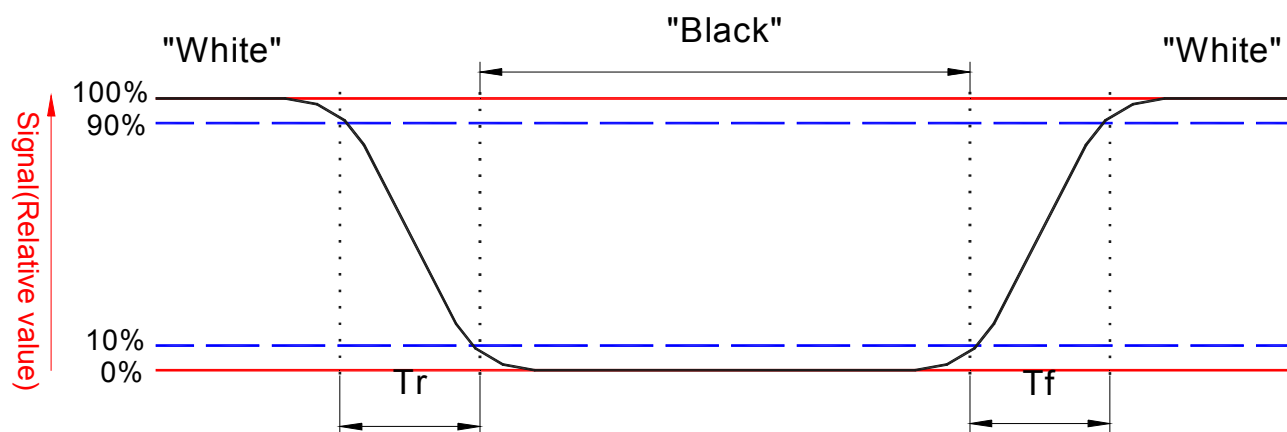
Note 2 :To be measured on the center area of panel with a viewing cone of 1°by Topcon luminance meter BM-7, after 10 minutes operation.

Note 3. Definition of response time:

The output signals of photo detector are measured when the input signals are changed from



“black” to “white”(falling time) and from “white” to “black”(rising time), respectively.  
The response time is defined as the time interval between the 10% and 90% of amplitudes.  
Refer to figure as below.



Note 4. Definition of contrast ratio:

Contrast ratio is calculated with the following formula.

$$\text{Contrast ratio (CR)} = \frac{\text{Photo detector output when LCD is at "White" state}}{\text{Photo detector output when LCD is at "Black" state}}$$

Note 5. Measured at the center area of the panel when all the input terminals of LCD panel are electrically opened.

## D. Reliability test items(Note 2):

No.	Test items	Conditions	Remark
1	High temperature storage	Ta= 95℃ 240Hrs	
2	Low temperature storage	Ta= -40℃ 240Hrs	
3	High temperature operation	Tp= 85℃ 240Hrs	
4	Low temperature operation	Ta= -30℃ 240Hrs	
5	High temperature and high humidity	Tp= 60℃, 90% RH 240Hrs	Operation
6	Heat shock	-30℃~85℃/200 cycles 1Hrs/cycle	Non-operati
7	Electrostatic discharge	±200V,200pF(0Ω), once for each terminal	Non-operati on
8	Vibration	Frequency range : 8~33.3Hz Stoke : 1.3mm Sweep : 2.9G, 33.3 ~ Cycle : 15 minutes 2 hours for each direction of X,Z 4 hours for Y direction	JIS C7021, A-10 Condition A
9	Mechanical shock	100G, 6ms, ±X,±Y,±Z 3 times for each direction	JIS C7021, A-7 Condition C
10	Vibration (with carton)	Random vibration: 0.015G <sup>2</sup> /Hz from 5~200Hz -6dB/octave from 200~500Hz	IEC 68-34
11	Drop (with carton)	Height: 60cm 1 corner, 3 edges, 6 surfaces	JIS Z0202

Note1: Ta: Ambient Temperature.

Note2: Tp: Panel Surface Temperature

Note3: In the standard conditions, there is not display function NG issue occurred. All the cosmetic specification is judged before the reliability stress.



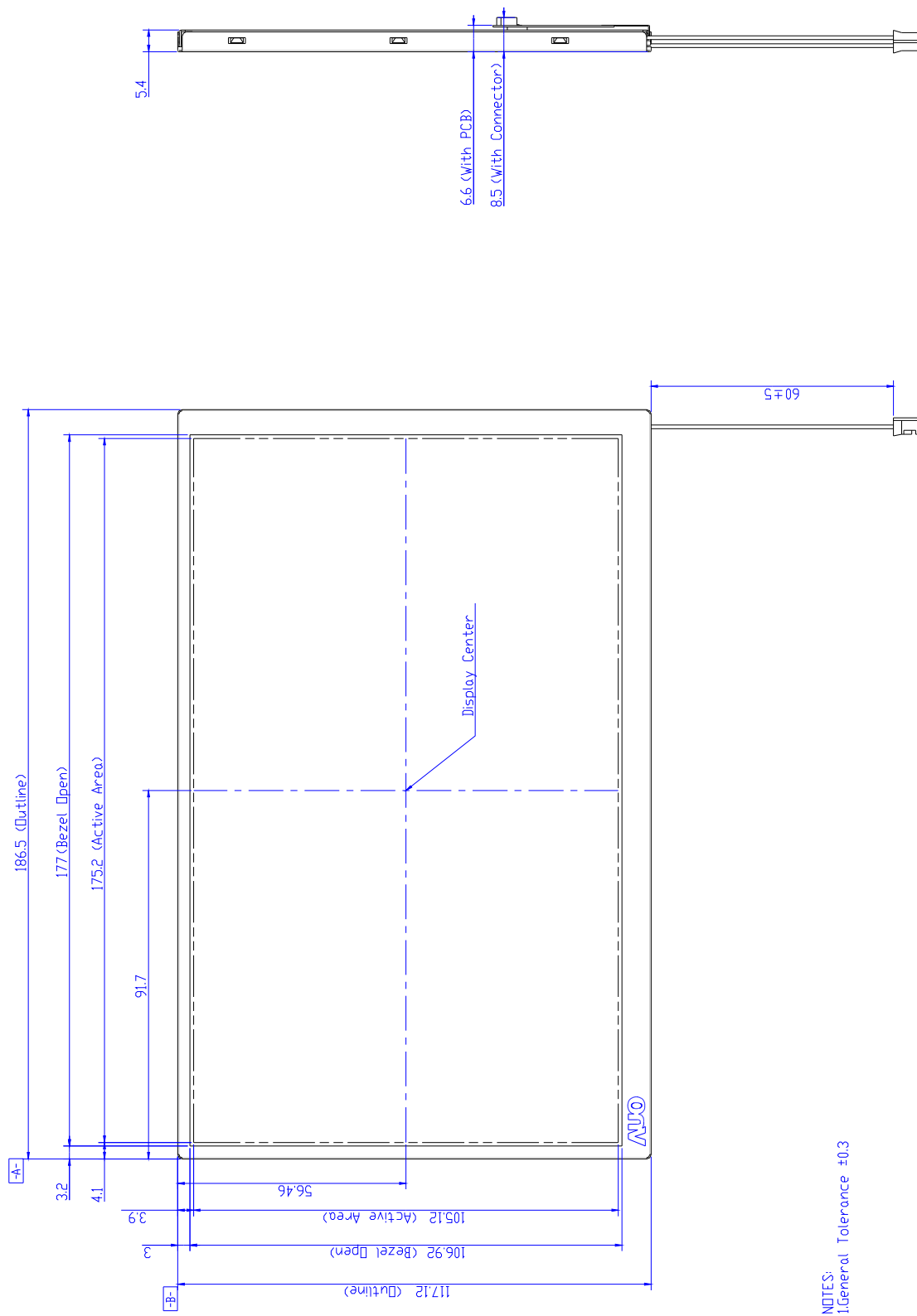
## **E. Packing form**

TBD

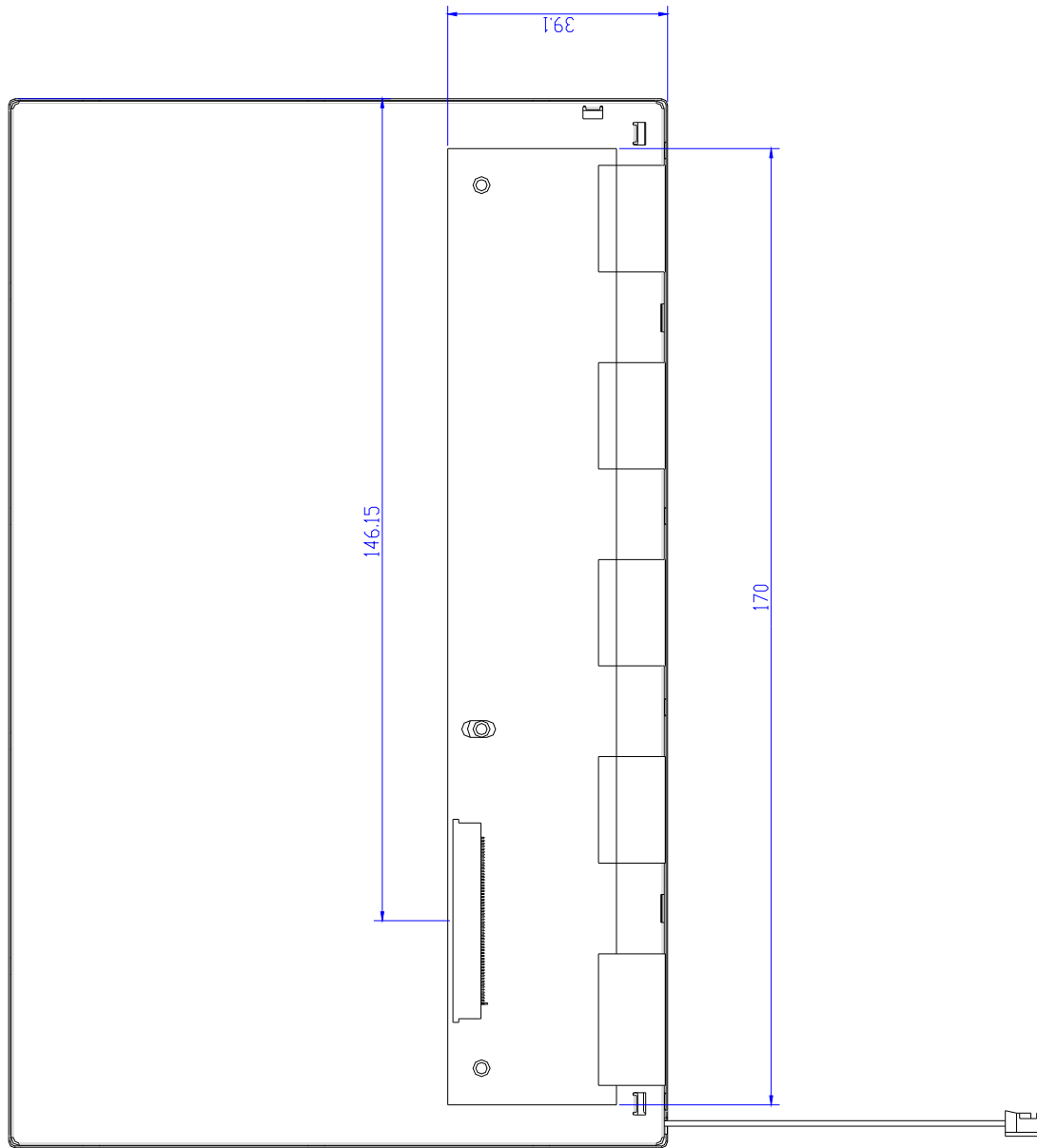
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## Appendix:



**Fig 1-a Outline dimension of TFT-LCD module (Front View)**



**Fig 1-b Outline dimension of TFT-LCD module (Rear View)**

■ Timing Diagram 1 ( CHNSL="1" , Default )

<< EDGSL="0" , Default >>

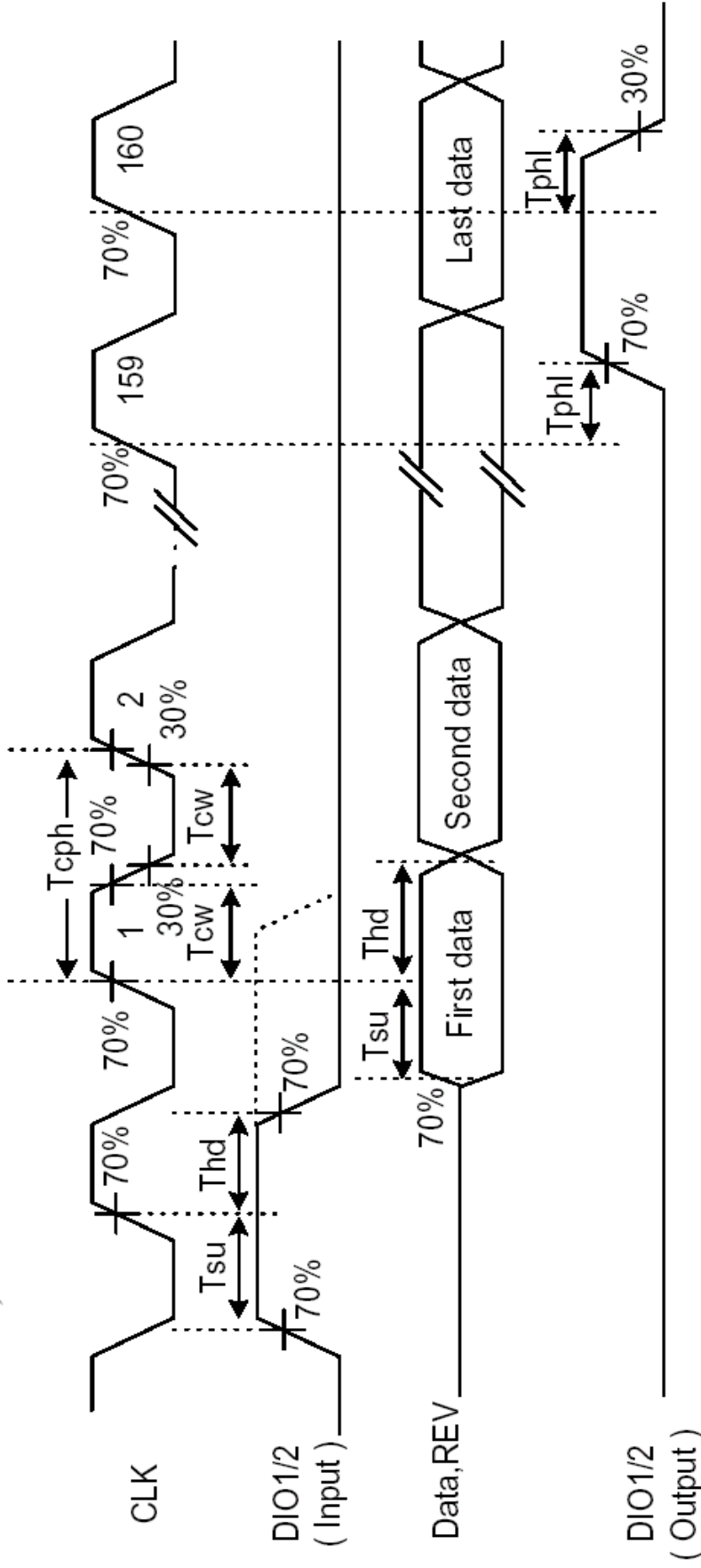


Fig.2 Operation Mode 1

<< EDGSL = "1">>

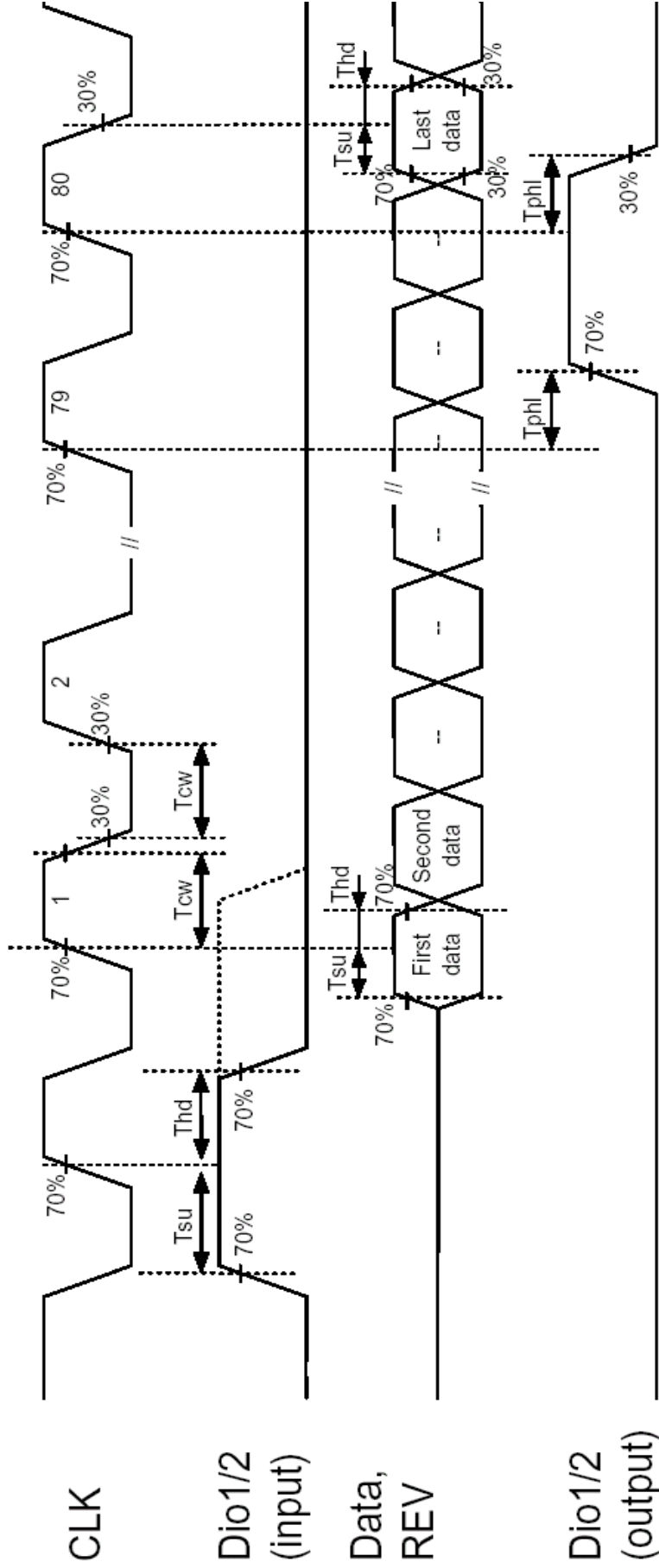


Fig.3 Operation Mode 2

■ Timing Diagram 2

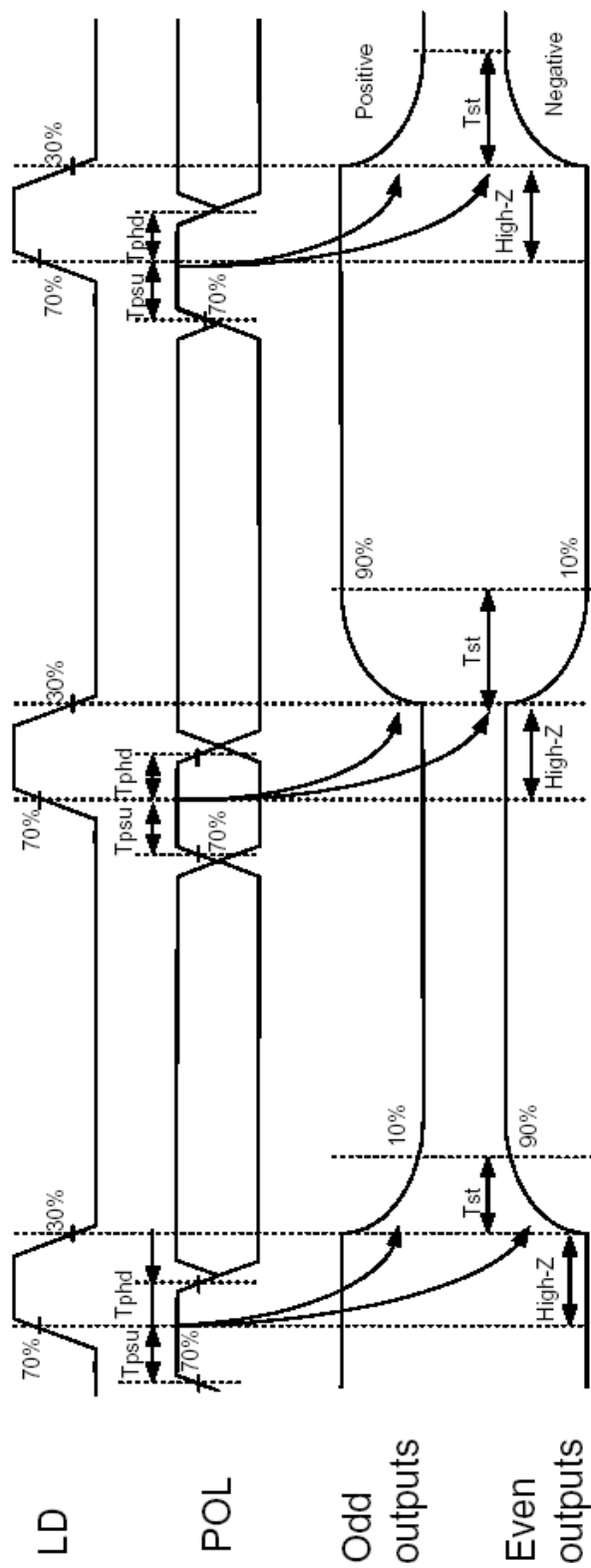
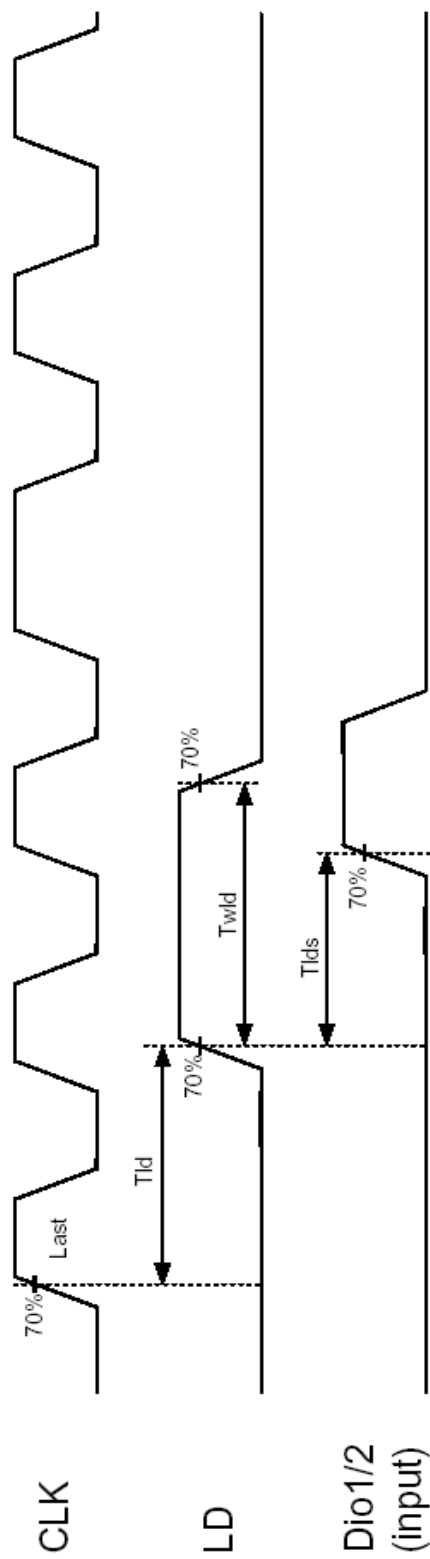


Fig.4 Horizontal timing



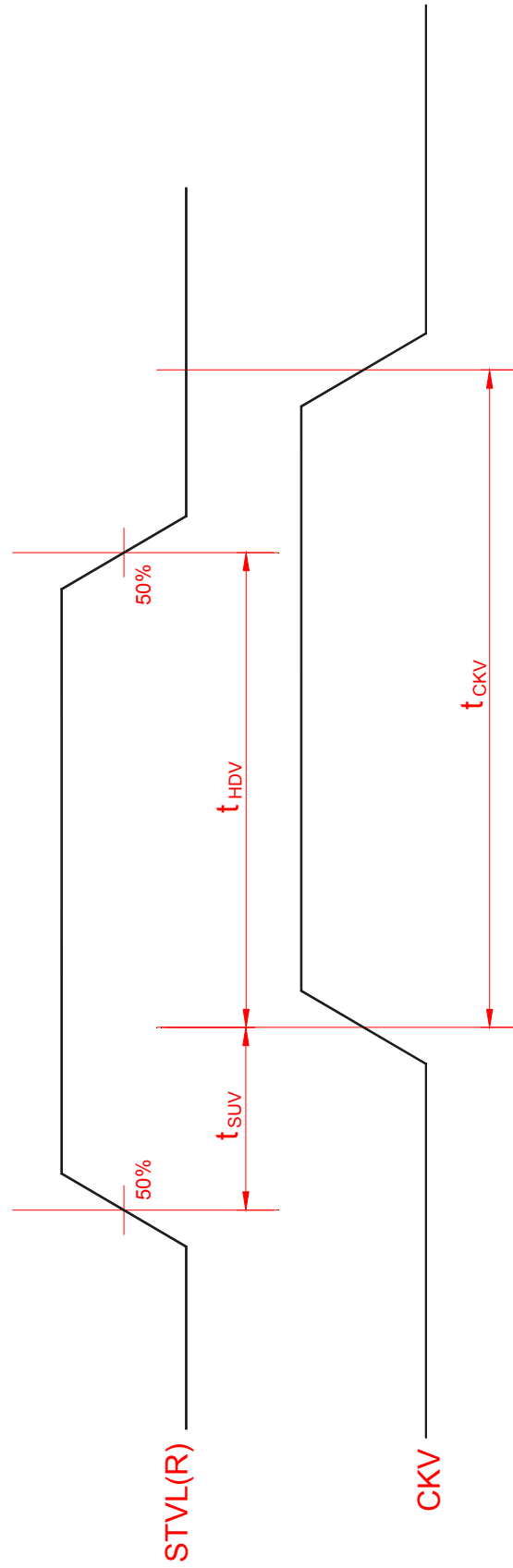


Fig.5 Vertical shift clock timing

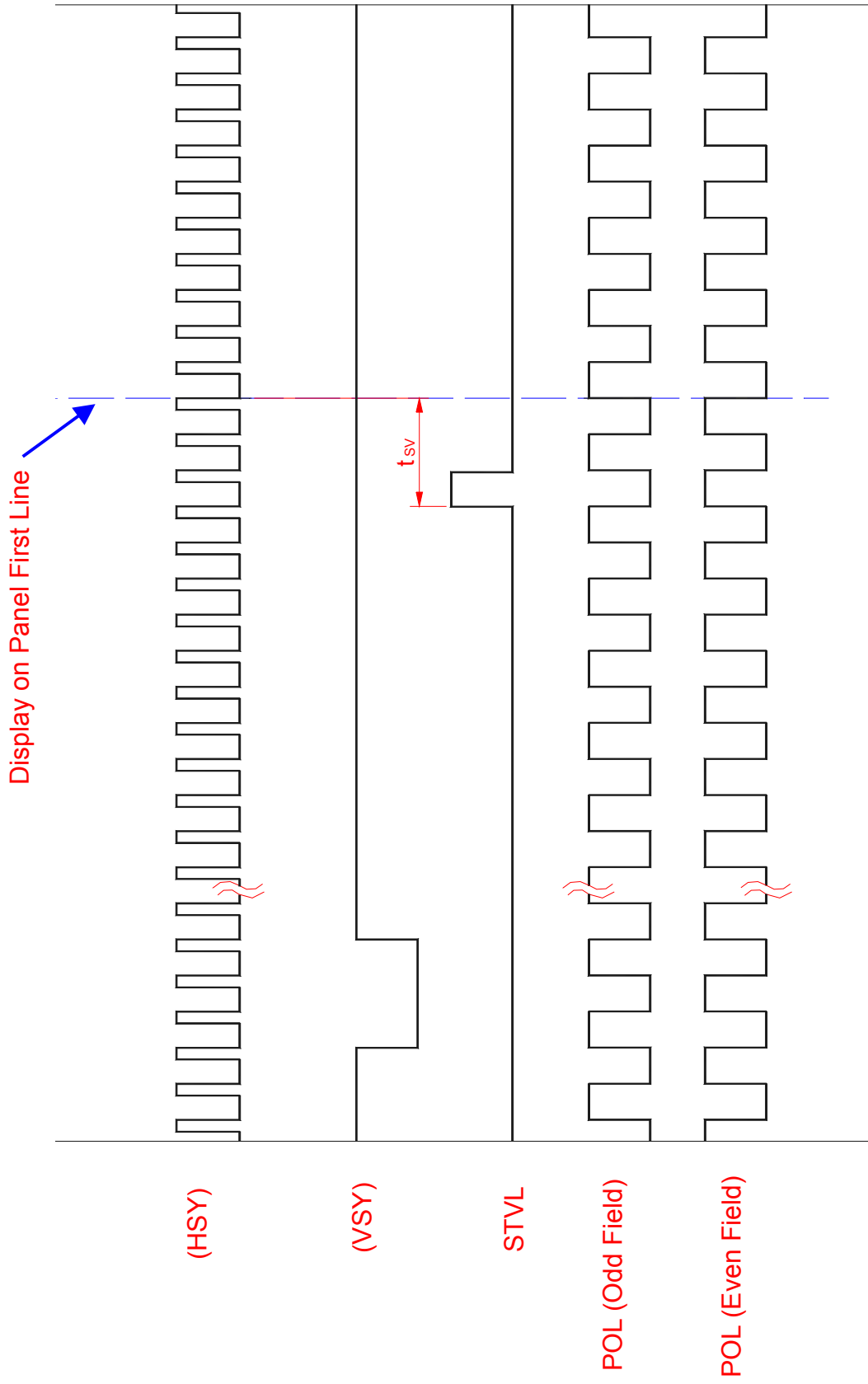


Fig.6 Vertical timing (from up to down)