

Approval sheet

Customer: _____

Modelname: JT700MZYEV02

Spec NO: _____

Date: 2017.5.31

Version: 00

Preliminary Specification

Final Specification

For Customer's Acceptance

Approved by	Content

Approved by	Reviewed by	Prepared by

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1. General Specification

Item	Contents	Unit
LCD TYPE	TFT/TRANSMISSIVE	
MODULE SIZE (W*H*T)	165.62*107.45*2.8	MM
ACTIVE SIZE (W*H)	150.72*94.2	MM
PIXEL PITCH (W*H)	0.11775*0.11775	MM
NUMBER OF DOTS	1280*800	
DIVER IC	JD9365	
INTERFACE TYPE	MIPI	
TOP POLARIZER TYPE	ANTI-GLARE	
RECOMMEND VIEWING DIRECTION	ALL	O'CLOCK
GRAY SCALE INVERSION DIRECTION	--	O'CLOCK
BACKLIGHT TYPE	20-CHIP WHITE LED	
TOUCH PANEL TYPE	WITHOUT	

2. Mechanical Drawing

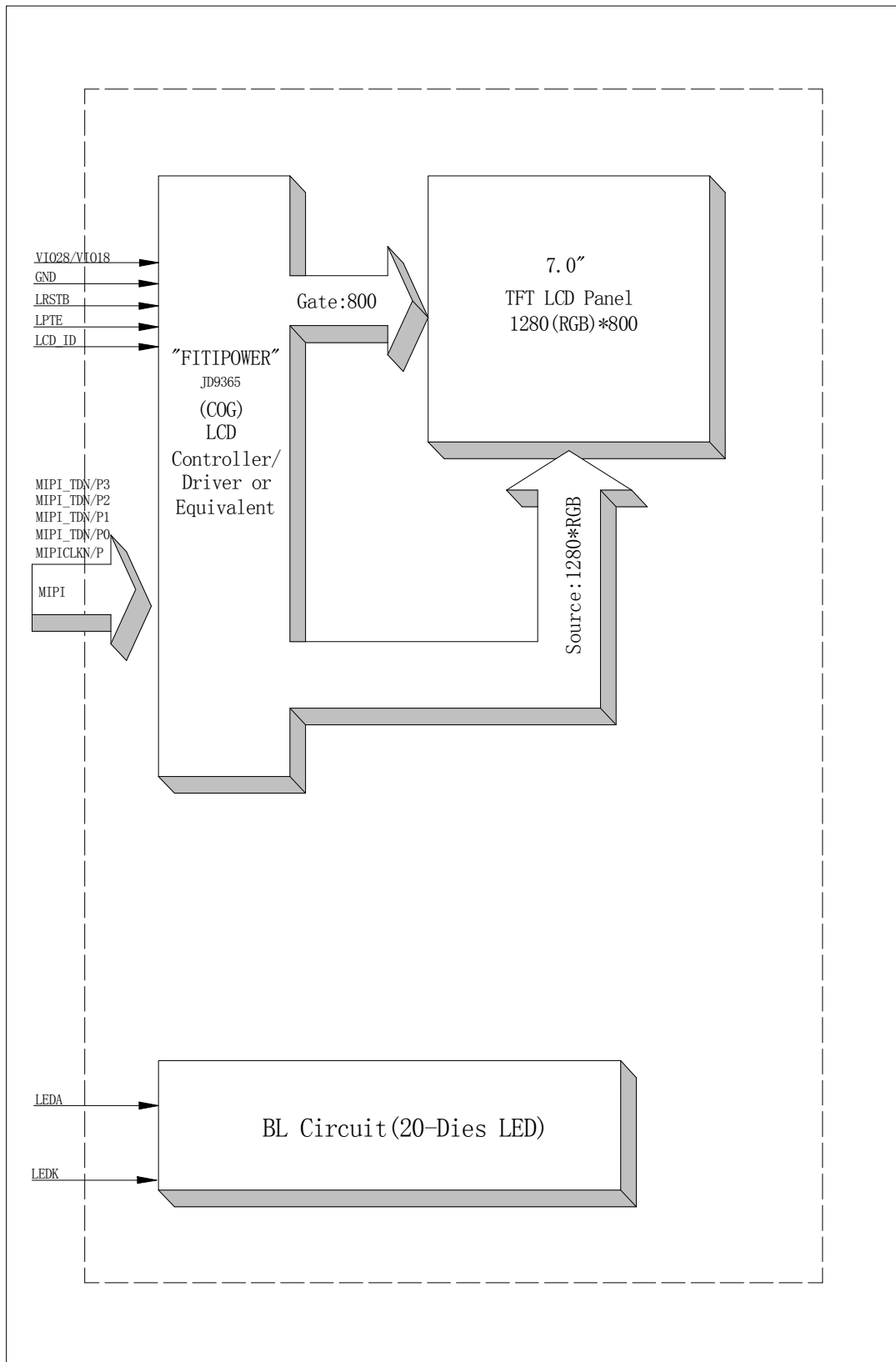
Pin No	Name
1	GND
2	VLED N
3	LEST R
4	LPIE
5	VTRG PMU
6	VTRG PMU
7	LED IB
8	GND
9	MPI_TDP2
10	MPI_TDP2
11	GND
12	MPI_DP3
13	MPI_DP3
14	GND
15	VLED P
16	GND
17	MPI_TCP
18	MPI_TCN
19	GND
20	MPI_DIN0
21	MPI_DFP0
22	GND
23	MPI_DIN1
24	MPI_DFP1
25	GND
26	GND
27	GND
28	GND
29	GND
30	GND

Display Type	TFT	TRANSMISSIVE, POSITIVE
Optimum Viewing Direction	ALL VIEW	
Upper Polarizer Type	Anti-Glare	
LCD Driver IC	JD9365	
Operating Voltage	VCC=3.3V	
Operation Temperature	-20°C TO 70°C	
Storage Temperature	-50°C TO 80°C	
Interface	MIPI	
Backlight	20-CHIP WHITE LED	
Surface luminance	300 cd/m ² (TYP.)	
White X/Y	---	

DRAWING NO.		JT700MZYEV02	
TITLE		MODULE SPEC.	
DRAWN	ME.CHECKED	UNIT	mm
EE.CHECKED	APPROVED	SCALE	FIT
CUSTOMER'S APPROVAL		3rd Angle	
SIGN		SHEET 1 OF 1	
DATE		Jasonic Technology Limited	
V00	First issue		
VER. SYMBOL	AMENDMENT		

NOTES:
 1. General Tolerance: ±0.2
 2. () Reference dimension.
 3. ROHS MUST BE COMPLIANT

3. Block Diagram



4. Interface Pin Function

Pin No.	Symbol	Description
1	GND	GROUND
2	VLED_N	LED CATHODE
3	LRSTB	RESET PIN
4	LPTE	TEARING EFFECT
5	VI028_PMU	POWER SUPPLY FOR ANALOG
6	VI018_PMU	POWER SUPPLY FOR LOGIC
7	LCD_ID	Product ID signal output (1.8V)
8	GND	GROUND
9	MIPI_TDN2	MIPI DATA NEGATIVE SIGNAL(2N)
10	MIPI_TDP2	MIPI DATA NEGATIVE SIGNAL(2P)
11	GND	GROUND
12	MIPI_TDN3	MIPI DATA NEGATIVE SIGNAL(3N)
13	MIPI_TDP3	MIPI DATA NEGATIVE SIGNAL(3P)
14	GND	GROUND
15	VLED_P	LED ANODE
16	GND	GROUND
17	MIPI_TCP	MIPI CLK POSITIVE SIGNAL(CLKP)
18	MIPI_TCN	MIPI CLK NEGATIVE SIGNAL(CLKN)
19	GND	GROUND
20	MIPI_TDN0	MIPI DATA NEGATIVE SIGNAL(0N)
21	MIPI_TDP0	MIPI DATA NEGATIVE SIGNAL(0P)
22	GND	GROUND
23	MIPI_TDN1	MIPI DATA NEGATIVE SIGNAL(1N)
24	MIPI_TDP1	MIPI DATA NEGATIVE SIGNAL(1P)
25~30	GND	GROUND

5. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply voltage for analog	VI028_PMU	-0.3	6.6	V
Supply voltage for logic	VI018_PMU	-0.3	3.6	V
Supply current (One LED)	I _{LED}		30	mA
Operating temperature	T _{OP}	-20	+70	°C
Storage temperature	T _{ST}	-30	+80	°C

Note: The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

6. Electrical Characteristics

6.1 Input Power

Item	Symbol	Min	Typ.	Max	Unit	Applicable terminal
Supply Voltage for Analog	VI028_PM U	2.5	3.3	6.0	V	
Supply Voltage for Logic	VI018_PM U	1.65	1.8	3.6	V	
Input Voltage	V _{IL}	GND	-	0.2 VI018_PM U	V	
	V _{IH}	0.8VI018_ PMU	-	VI018_PM U		
Input leakage Current	I _{LKG}	-		-	μA	

6.2 Backlight Driving Conditions

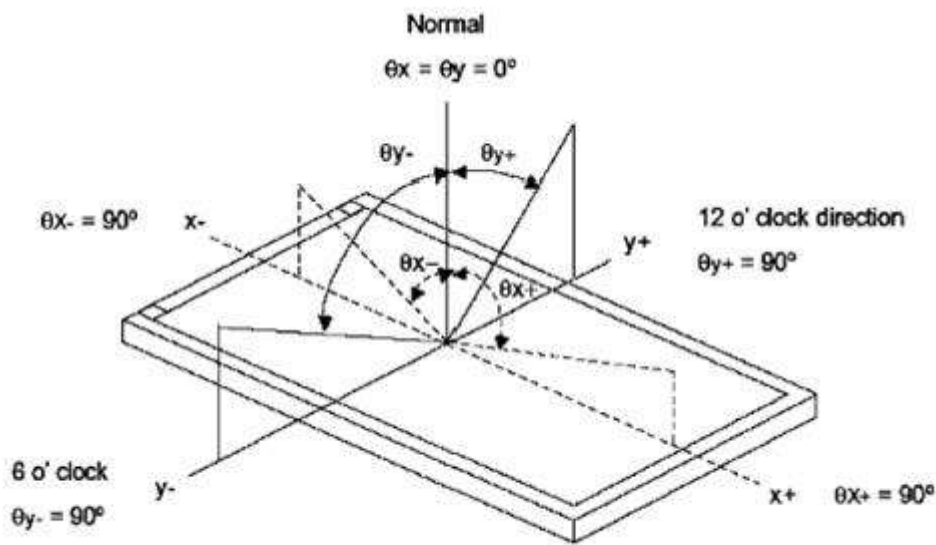
Item	Symbol	Value			Unit	Remark
		Min.	Typ.	Max.		
Voltage for LED Backlight	V _F	14.5	16	16.5	V	I _L =80mA
Current for LED Backlight	I _L		80		mA	
Power Consumption	P		1.28		W	
LED Life Time		30,000	50,000		Hr	Note

Note: Brightness to be decreased to 50% of the initial value at ambient temperature TA=25°C

7. Optical Characteristics

ITEM	SYMBOL	CONDITIONS	SPECIFICATIONS			UNIT	NOTE
			MIN	TYP.	MAX		
Luminance	L	$I_L = 80\text{mA}$	240	300	360	Cd/m^2	
Contrast Ratio	CR	$\theta = 0^\circ$	600	800			
Response Time	T_{ON}	25°C	--	30	40	ms	
	T_{OFF}						
CIE Color Coordinate	Red	X_R	Viewing normal angle	0.618	0.638	0.658	
		Y_R		0.320	0.340	0.360	
	Green	X_G		0.330	0.350	0.370	
		Y_G		0.590	0.610	0.630	
	Blue	X_B		0.123	0.143	0.163	
		Y_B		0.068	0.088	0.108	
	White	X_W		0.298	0.318	0.338	
		Y_W		0.340	0.360	0.380	
Viewing Angle	Hor.	θ_{X+}	$\text{CR} \geq 10$	80	85	Degree	
		θ_{X-}		80	85		
	Ver.	θ_{Y+}		80	85		
		θ_{Y-}		80	85		
Uniformity	Un		70	75		%	

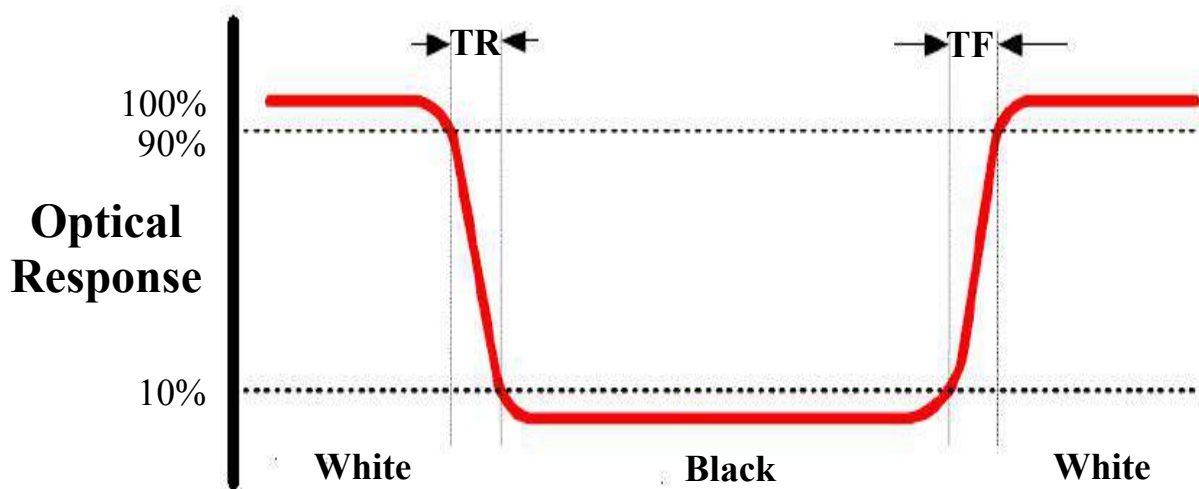
Note 1: Definition of Viewing Angle θ_x and θ_y :



Note 2: Definition of contrast ratio CR:

$$CR = \frac{\text{Luminance of white state}}{\text{Luminance of black state}}$$

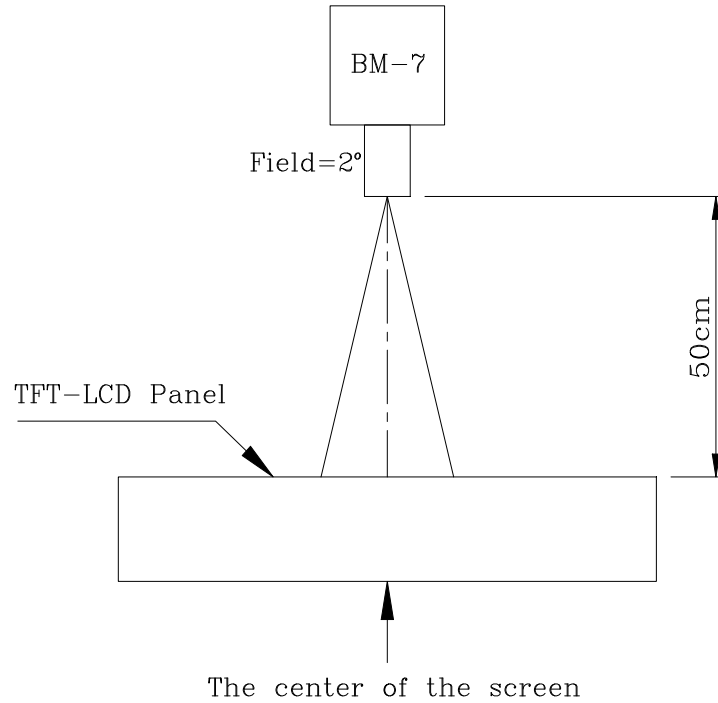
Note 3: Definition of Response Time(T_r, T_f)



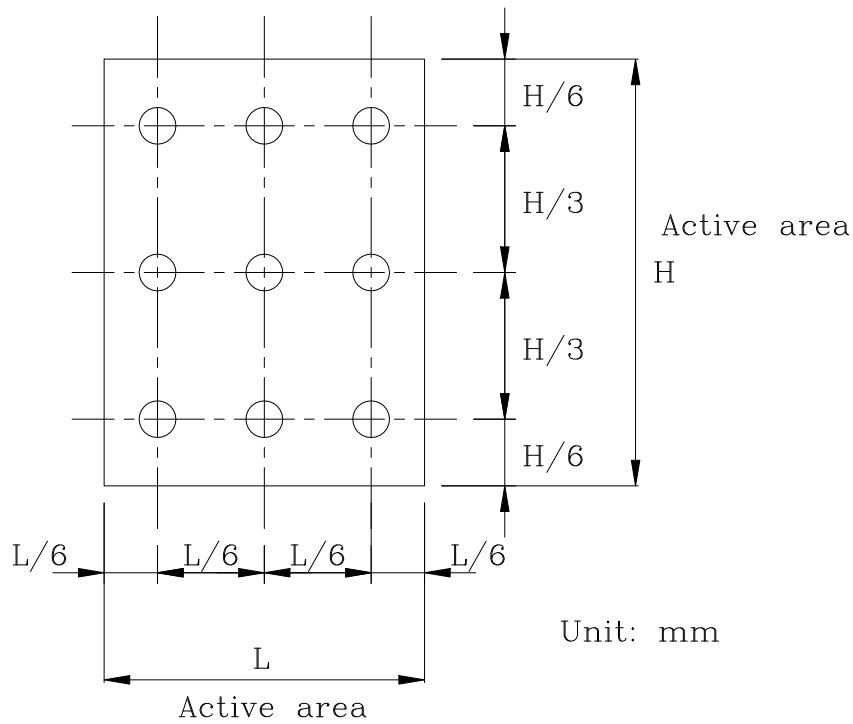
Note 4: Definition of Luminance

①The Brightness Test Equipment Setup

Field=2° (As measuring “black” image, field=2° is the best testing condition)



②The Brightness Test Point Setup

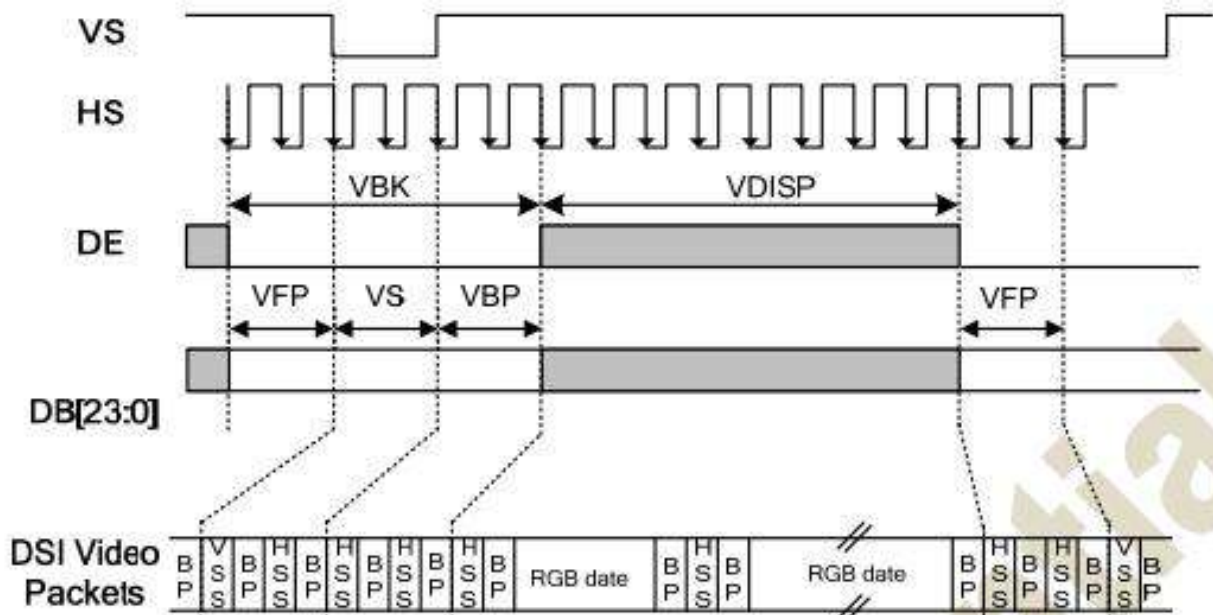


8. Timing Characteristics

8.1 Signal timing

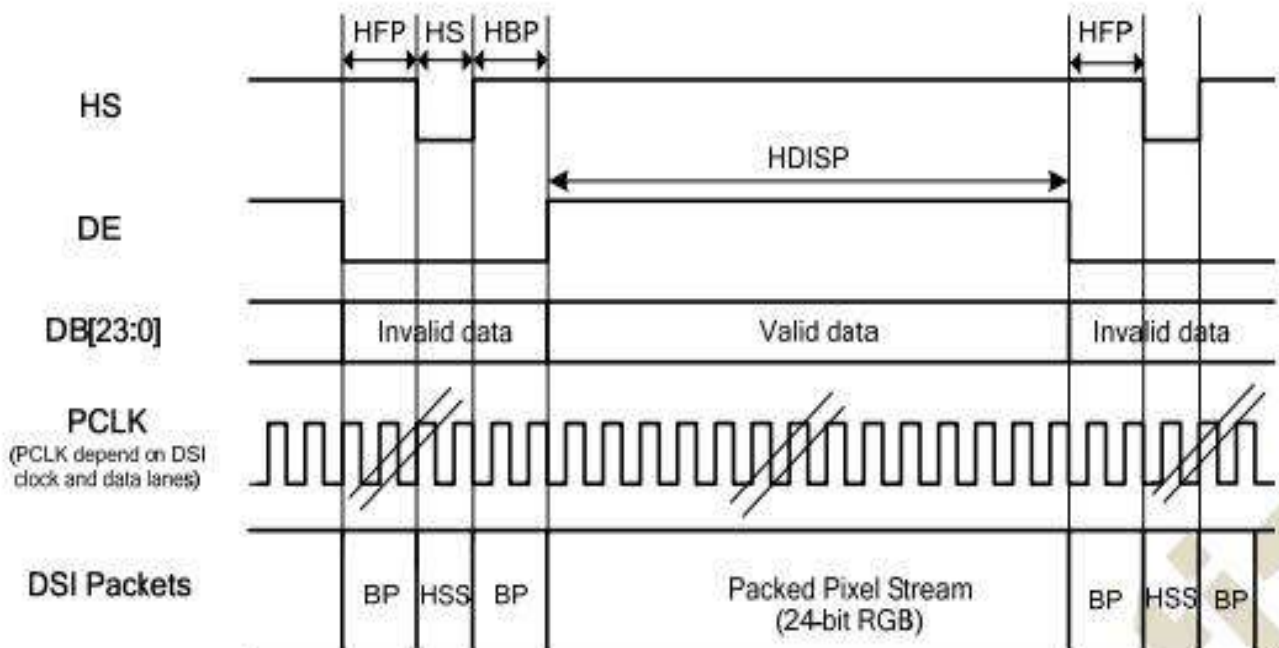
Vertical timings

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Vertical low pulse width	VS	-	2	4	200 Note(1)	Line
Vertical front porch	VFP	-	4	20	200	Line
Vertical back porch	VBP	-	2	10	200 Note(1)	Line
Vertical blanking period	VBK	VS+VBP+VFP	8	34	250	Line
Vertical active area	-	VDISP	-	1280	-	Line
Vertical Refresh rate	VRR	-	-	60	-	Hz

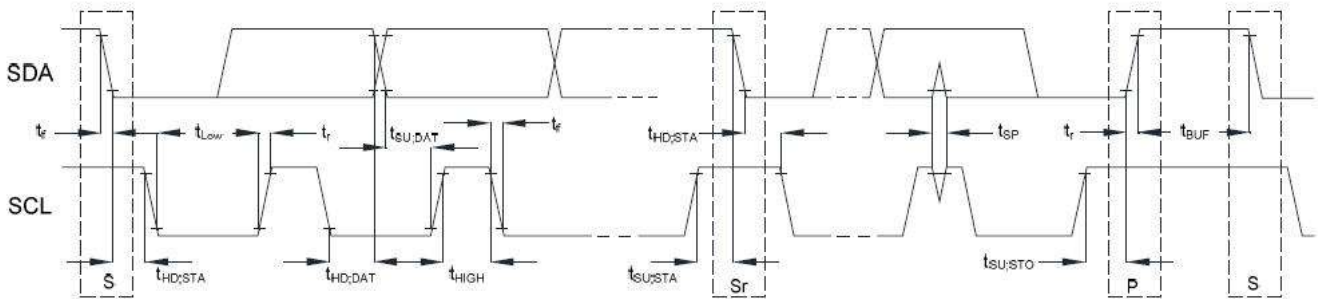


Horizontal Timings

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
HS low pulse width	HS	-	6	18	78	DCK
Horizontal back porch	HBP	-	5	18	78	DCK
Horizontal front porch	HFP	-	5	18	78	DCK
Horizontal blanking period	HBLK	HS+HBP+HFP	16	54 (Note1)	88	DCK
Horizontal active area	HDISP	-	-	800	-	DCK
Pixel Clock	PCLK	-	63.06 (Note2)	67.33 (Note2)	81.51 (Note2)	MHz



8.1 CTP I2C Timings



Symbol	Parameter	100KHz			400KHz		
		Min	Max	Unit	Min	Max	Unit
f_{SCL}	SCL clock frequency	0	100	kHz	0	400	KHz
$t_{HD,STA}$	Hold time (repeated) START condition. After this period, the first clock pulse is generated	4.0	–	μs	0.6	–	μs
t_{LOW}	LOW period of the SCL clock	4.7	–	μs	1.3	–	μs
t_{HIGH}	HIGH period of the SCL clock	4.0	–	μs	0.6	–	μs
$t_{SU,STA}$	Set-up time for a repeated START condition	4.7	–	μs	0.6	–	μs
$t_{HD,DAT}$	Data hold time	0	3.45	μs	0	0.9	μs
$t_{SU,DAT}$	Data set-up time	250	–	ns	100	–	ns
t_r	Rise time of both SDA and SCL signals	–	1000	ns	–	300	ns
t_f	Fall time of both SDA and SCL signals	–	300	ns	–	300	ns
$t_{SU,STO}$	Set-up time for STOP condition	4.0	–	μs	0.6	–	μs
t_{BUF}	Bus free time between a STOP and START condition	4.7	–	μs	1.3	–	μs

9. Standard Specification for Reliability

9.1 Standard Specification for Reliability of LCD Module

Item	Test Conditions	Remark
High temperature storage	Ta=80°C 240hrs	NOTE1 , NOTE4
Low temperature storage	Ta=-30°C 240hrs	NOTE1 , NOTE4
High temperature operation	Ta=70°C 240hrs	NOTE2 , NOTE4
Low temperature operation	Ta=-20°C 240hrs	NOTE2 , NOTE4
Operate at high temperature and humidity	+60°C, 90%RH 240hrs	NOTE4
Thermal Shock	-20°C/30min~+60°C/30min for a total 100 cycles, start with cold temperature and end with high temperature.	NOTE4
Vibration Test	Frequency range:10~55HZ Stroke:1.5mm Swap:10HZ~55HZ~10HZ 2 hours of each direction of X.Y. Z (6 hours for total)	
Mechanical shock	200G 2ms, ±X, ±Y, ±Z 3 times for each direction	
Package vibration test	Random vibration :1.5G*G/HZ from 10-500 HZ,-6dB/Octave from 200-500HZ of each direction of X.Y. Z (6 hours for total)	
Low temperature storage	Height:60cm 1 corner ,3 edges ,6 surfaces	
Low temperature storage	AIR: 150pF,330 Ω , 15KV CONTACT:150pF,330 Ω , 8KV	

Note 1: Ta is the ambient temperature of samples.

Note 2: Ts is the temperature of panel's surface.

Note 3: In the standard condition, there shall be no practical problem that may affect the display function.
After the reliability test, the product only guarantees operation, but don't guarantee all of the cosmetic specification.

Note 4: Before cosmetic and function test, the product must have enough recovery time, at least 2 hours at room temperature.

10. General Precautions

10.1. Safety

- Liquid crystal is poisonous. Do not put it in your mouth. If liquid crystal touches your skin or clothes, wash it off immediately by using soap and water.

10.2. Handling

- The LCD panel is plate glass. Do not subject the panel to mechanical shock or to excessive force on its surface.
- The polarizer attached to the display is easily damaged. Please handle it carefully to avoid scratch or other damages.
- To avoid contamination on the display surface, do not touch the module surface with bare hands.
- Keep a space so that the LCD panels do not touch other components.
- Put cover board such as acrylic board on the surface of LCD panel to protect panel from damages.
- Transparent electrodes may be disconnected if you use the LCD panel under environmental conditions where the condensation of dew occurs.
- Do not leave module in direct sunlight to avoid malfunction of the ICs.

10.3. Static Electricity

- Be sure to ground module before turning on power or operating module.
- Do not apply voltage which exceeds the absolute maximum rating value.

10.4. Storage

- Store the module in a dark room where must keep at $25\pm 10^{\circ}\text{C}$ and 65%RH or less.
- Do not store the module in surroundings containing organic solvent or corrosive gas.
- Store the module in an anti-electrostatic container or bag.

10.5. Cleaning

- Do not wipe the polarizer with dry cloth. It might cause scratch.
- Only use a soft cloth with IPA to wipe the polarizer, other chemicals might permanent damage to the polarizer.

11. Packing Method

----TBD