

SPECIFICATION

128*64 Dot Matrix LCD Module

GDSC1286BWM-04
(COG+BACKLIGHT)

XIAMEN OCULAR LCD DEVIDES CO.,LTD.

GENERAL SPECIFICATION

Interface with **Paraller** MPU

Display Specification

Display dot matrix :**128*64**

Display mode:Negetive/Transmission/STN Type(BLUE)

Viewing angle :**6:00** clock

Display duty:**1/65** Driving bias:**1/9** Driving voltage:**9.5v**

Mechanical characteristics(Unit:mm)

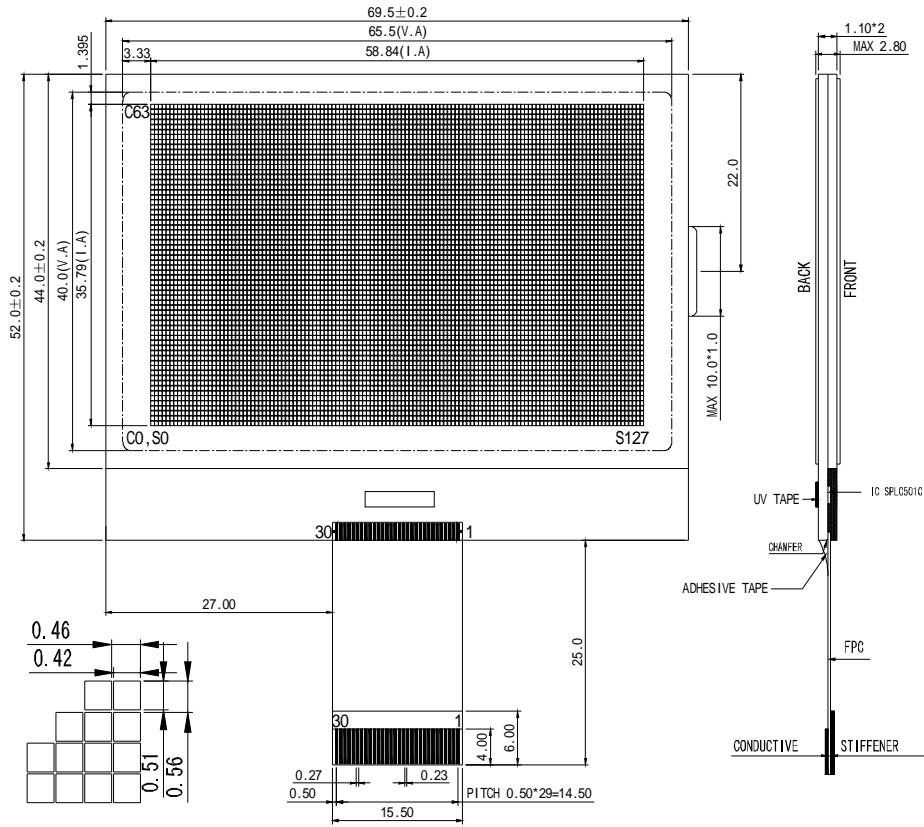
Extenal dimension:**69.5x52.0x2.8**

View area:**58.84x35.79**

Dots size:**0.42x0.51**

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External Dimension



PIN CONNECTION

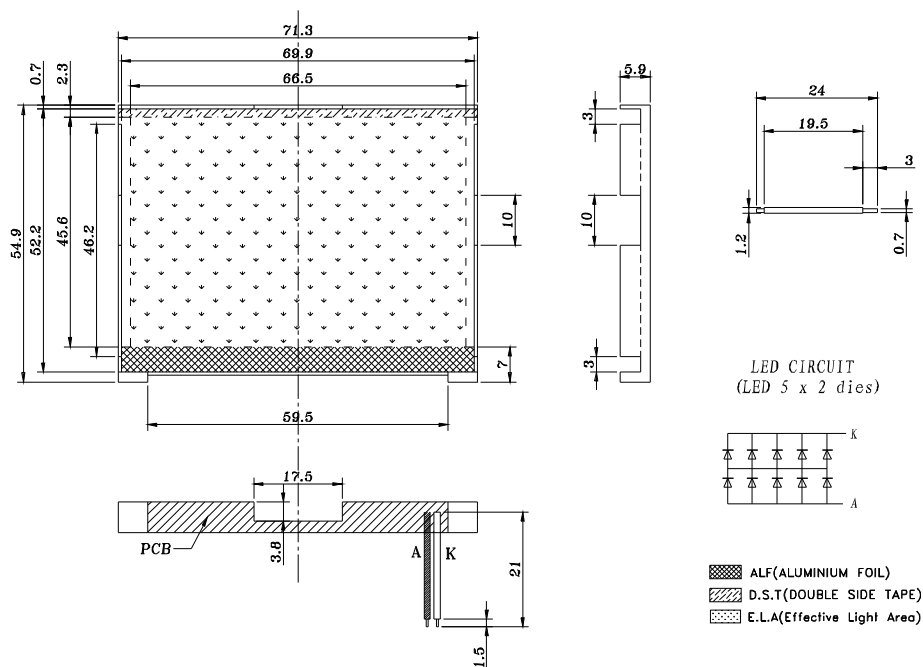
NO	SYMBOL
1	/CST
2	/RES
3	A0
4	/R/N/ /IR
5	EP-/RD
6	DB0
7	DB1
8	DB2
9	DB3
10	DB4
11	DB5
12	DB6: SCL
13	DB7: SI
14	VDD
15	VSS
16	VOUT
17	CAP3-
18	CAP1+
19	CAP1-
20	CAP2-
21	CAP2+
22	V1
23	V2
24	V3
25	V4
26	V5
27	VR
28	C86
29	PS
30	/IRS

IC	LCD
C0-C63	COM0-COM63
S0-S127	SEG0-SEG127

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BACKLIGHT

1、 Mechanical Outline(Unspecified Tolerances is: $\pm 0.3\text{mm}$) Color: White



2、 Storage & Soldering Conditions:

- 1 Store with care. Storing the units in bad condition will cause the reflector sheet and decrease it's adhesive power. Storage the products under the condition: temperature ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$) and humidity ($65^{\circ}\text{CRH} \pm 20^{\circ}\text{CRH}$) our recommendation.
- 1 The soldering Temperature is $260 \pm 5^{\circ}\text{C}$ and Soldering Time should be less than 3 sec, and soldering iron power should be less than 30W.
- 1 The soldering point should be farther than 1.6mm from body.

3、 ABSOLUTE MAXIMUM RATINGS

(Unless specified, The Ambient temperature $T_a = 25^{\circ}\text{C}$)

Item	Symbol	Condition	Rating	Un
Absolute maximum forward current	Ifm		150	mA
Peak forward current	Ifp	1 msec Plus 10% Duty Cycle	250	mA
Reverse Voltage	Vr		10	V

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Power dissipation	Pd		600	mV
Operating Temperature Range	Topr		-20~+70	°C
Storage Temperature Range	Tstg		-20~+75	°C

4、ELECTRICAL-OPTICAL CHARACTERISTICS

(Unless specified, The Ambient temperature Ta=25°C)

Item	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage	Vf	3.8	4.0	4.2	V	I _F =50mA
Reverse Current	Ir			50	μA	V _r =10V
Luminance (Without Glass)	Lv		20		cd/m ²	I _F =50mA
Wave length	λp	570	573	575	nm	I _F =50mA

Absolute Maximun Ratings

(Unless otherwise noted, VSS = 0V)

Parameter		Symbol	Conditions	Unit
Power Supply Voltage		VDD	-0.3 to + 7.0	V
Power supply voltage (2) (VDD standard)	With Triple step-up	VSS2	-7.0 to +0.3	V
	With Quad step-up		-4.0 to +0.3	
			-3.0 to +0.3	
Power supply voltage (3) (VDD standard)		V ₅ , V _{OUT}	-12.0 to +0.3	V
Power supply voltage (4) (VDD standard)		V ₁ , V ₂ , V ₃ , V ₄	V ₅ to +0.3	V
Input voltage		V _{IN}	-0.3 to VDD +0.3	V
Output voltage		V _O	-0.3 to VDD +0.3	V
Operating temperature		T _{OPR}	-40 to +85	°C
Storage temperature	Bare chip	T _{STR}	-55 to +125	°C

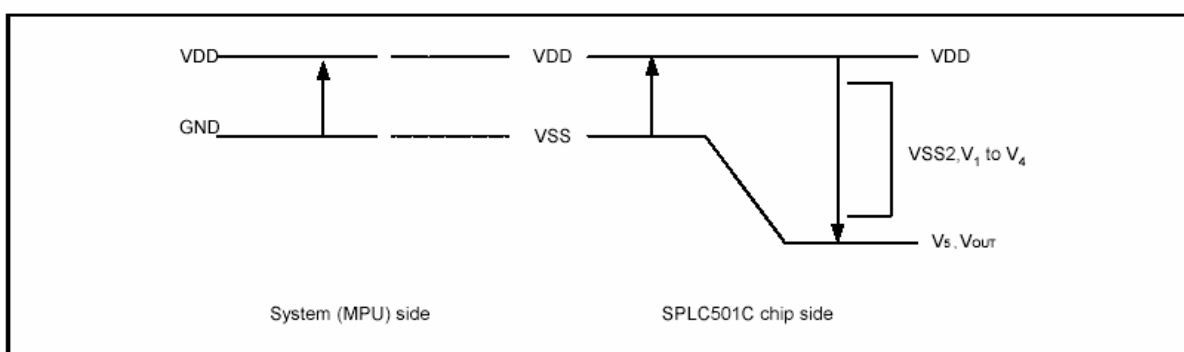


Figure 25

Notes and Cautions:

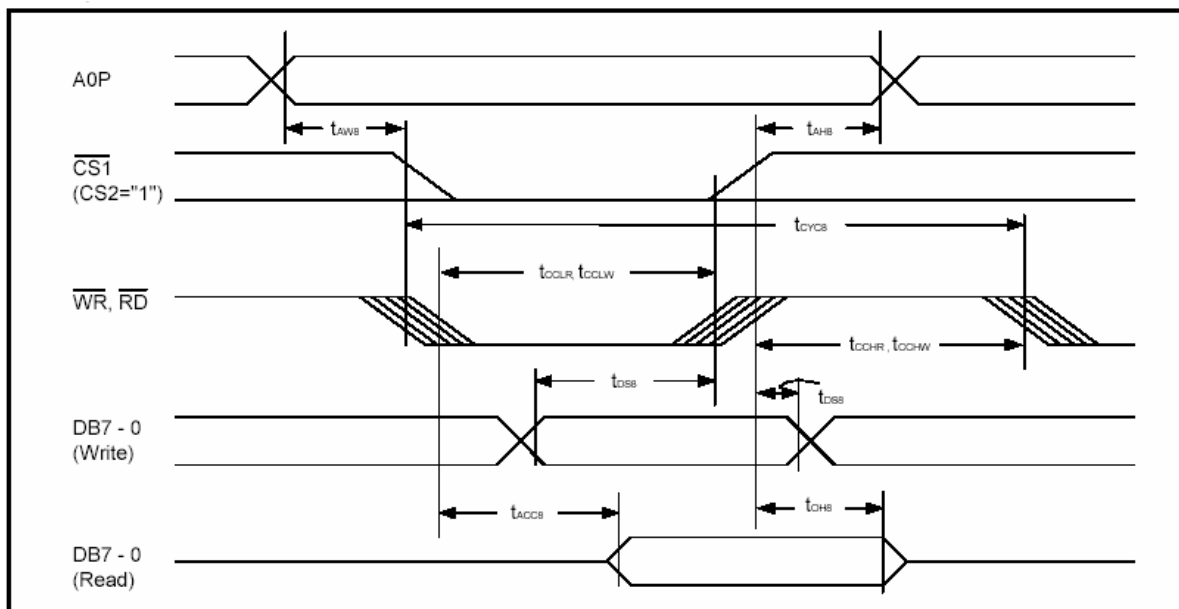
1. The VSS2, V₁ to V₅ and V_{OUT} are relative to the VDD = 0V reference.
2. Insure that the voltage levels of V₁, V₂, V₃, and V₄ are always such that VDD ≥ V₁ ≥ V₂ ≥ V₃ ≥ V₄ ≥ V₅.
3. Permanent damage to the LSI may result if the LSI is used outside of the absolute maximum ratings. Moreover, it is recommended that in normal operation the chip be used at the electrical characteristic conditions, and use of the LSI outside of these conditions may not only result in malfunctions of the LSI, but may have a negative impact on the LSI reliability as well.

Electrical Characteristics

Item	Symbol	Condition	Standard Value			Unit
			Min	Type	Max	
Supply Voltage For logic	Vdd-Vss	-	2.4	-	5.5	V
Supply Current For logic	I _{dd}	-	-	-	1000	uA
Driving Current For LCD	I _{ee}		-	-	80	uA
Driving Voltage For LCD	V _O -V _{ss}		-	-	-	V
Input Voltage H level	V _{ih}		0.7V _{dd}	-	V _{dd}	V
Input Voltage L level	V _{il}		V _{ss}	-	0.3V _{dd}	V

Timing characteristics

System bus read/write characteristics 1 (8080 Series MPU)



(VDD = 4.5V to 5.5V, T_A = 25°C)

Item	Signal	Symbol	Condition	Rating		Units
				Min.	Max.	
Address hold time	A0P	t _{AHB}		0	-	ns
Address setup time	A0P	t _{AWB}		0	-	ns
System cycle time	A0P	t _{CYCS}		166	-	ns
Control L pulse width (WR)	WR	t _{OCLW}		30	-	ns
Control L pulse width (RD)	RD	t _{OCLR}		70	-	ns
Control H pulse width (WR)	WR	t _{OCHW}		30	-	ns
Control H pulse width (RD)	RD	t _{OCHR}		30	-	ns
Data setup time	DB7 - 0	t _{DSB}		30	-	ns
Address hold time		t _{DHB}		10	-	ns
RD access time		t _{ACCB}	C _L = 100pF	-	70	ns
Output disable time		t _{OHB}		5.0	50	ns

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(VDD = 2.7V to 4.5V, T_A = 25°C)

Item	Signal	Symbol	Condition	Rating		Units
				Min.	Max.	
Address hold time	AOP	t _{AHB}		0	-	ns
Address setup time		t _{AWB}		0	-	ns
System cycle time	AOP	t _{CYCS}		300	-	ns
Control L pulse width (<u>WR</u>)	<u>WR</u>	t _{CCLW}		60	-	ns
Control L pulse width (<u>RD</u>)	<u>RD</u>	t _{CCLR}		120	-	ns
Control H pulse width (<u>WR</u>)	<u>WR</u>	t _{CCHW}		60	-	ns
Control H pulse width (<u>RD</u>)	<u>RD</u>	t _{CCHR}		60	-	ns
Data setup time	DB7 - 0	t _{DSB}		40	-	ns
Address hold time		t _{DHB}		15	-	ns
RD access time		t _{ACCB}	C _L = 100pF	-	140	ns
Output disable time		t _{OHB}		10	100	ns

(VDD = 2.4V to 2.7V, T_A = 25°C)

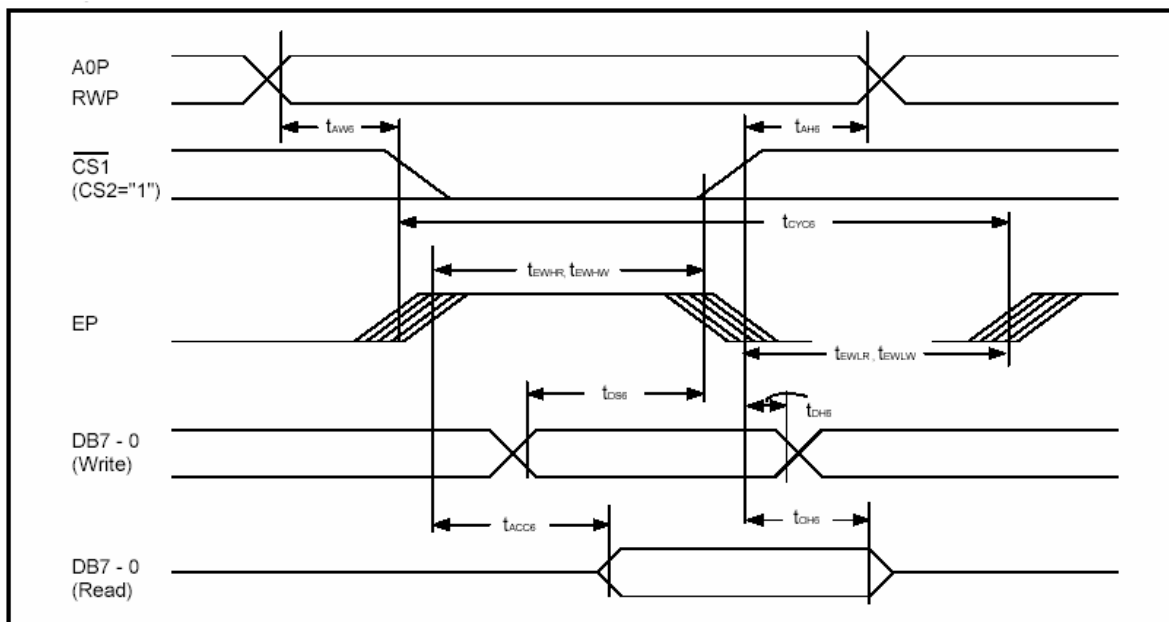
Item	Signal	Symbol	Condition	Rating		Units
				Min.	Max.	
Address hold time	AOP	t _{AHB}		0	-	ns
Address setup time		t _{AWB}		0	-	ns
System cycle time	AOP	t _{CYCS}		1000	-	ns
Control L pulse width (<u>WR</u>)	<u>WR</u>	t _{CCLW}		120	-	ns
Control L pulse width (<u>RD</u>)	<u>RD</u>	t _{CCLR}		240	-	ns
Control H pulse width (<u>WR</u>)	<u>WR</u>	t _{CCHW}		120	-	ns
Control H pulse width (<u>RD</u>)	<u>RD</u>	t _{CCHR}		120	-	ns
Data setup time	DB7 - 0	t _{DSB}		80	-	ns
Address hold time		t _{DHB}		30	-	ns
RD access time		t _{ACCB}	C _L = 100pF	-	280	ns
Output disable time		t _{OHB}		10	200	ns

Note1: The input signal rise time and fall time (t_r, t_f) is specified at 15 ns or less. When the system cycle time is extremely fast, (t_r + t_f) ≤ (t_{CYCS} - t_{CCLW} - t_{CCHW}) for (t_r + t_f) ≤ (t_{CYCS} - t_{CCLR} - t_{CCHR}) are specified.

Note2: All timing is specified using 20% and 80% of VDD as the reference.

Note3: t_{CCLW} and t_{CCLR} are specified as the overlap between CS1 being 'L' (CS2 = 'H') and WR and RD being at the 'L' level.

System bus read/write characteristics 2 (6800 Series MPU)



(VDD = 4.5V to 5.5V, T_A = 25°C)

Item	Signal	Symbol	Condition	Rating		Units
				Min.	Max.	
Address hold time	A0P	t _{AHS}		0	-	ns
Address setup time	A0P	t _{AVS}		0	-	ns
System cycle time	A0P	t _{CYS}		166	-	ns
Data setup time	DB7 - 0	t _{DS}	C _L = 100pF	30	-	ns
Data hold time		t _{DHS}		10	-	ns
Access time	DB7 - 0	t _{ACC}		-	70	ns
Output disable time		t _{OHS}		10	50	ns
Enable H pulse time	Read	EP	t _{EWHR}	70	-	ns
	Write		t _{EWHW}	30	-	ns
Enable L pulse time	Read	EP	t _{EWLR}	30	-	ns
	Write		t _{EWLW}	30	-	ns

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(VDD = 2.7V to 4.5V, T_A = 25°C)

Item	Signal	Symbol	Condition	Rating		Units	
				Min.	Max.		
Address hold time	A0P	t _{AH6}		0	-	ns	
Address setup time		t _{AW6}		0	-	ns	
System cycle time	A0P	t _{CYC6}		300	-	ns	
Data setup time	DB7 - 0	t _{DS6}	C _L = 100pF	40	-	ns	
Data hold time		t _{DH6}		15	-	ns	
Access time		t _{ACC6}		-	140	ns	
Output disable time		t _{OH6}		10	100	ns	
Enable H pulse time	Read	EP		t _{EWHR}	120	-	ns
	Write			t _{EWHW}	60	-	ns
Enable L pulse time	Read	EP		t _{EWLR}	60	-	ns
	Write			t _{EWLW}	60	-	ns

(VDD = 2.4V to 2.7V, T_A = 25°C)

Item	Signal	Symbol	Condition	Rating		Units	
				Min.	Max.		
Address hold time	A0P	t _{AH6}		0	-	ns	
Address setup time		t _{AW6}		0	-	ns	
System cycle time	A0P	t _{CYC6}		1000	-	ns	
Data setup time	DB7 - 0	t _{DS6}	C _L = 100pF	80	-	ns	
Data hold time		t _{DH6}		30	-	ns	
Access time		t _{ACC6}		-	280	ns	
Output disable time		t _{OH6}		10	120	ns	
Enable H pulse time	Read	EP		t _{EWHR}	240	-	ns
	Write			t _{EWHW}	120	-	ns
Enable L pulse time	Read	EP		t _{EWLR}	120	-	ns
	Write			t _{EWLW}	120	-	ns

Note1: The input signal rise time and fall time (tr, tf) is specified at 15 ns or less. When the system cycle time is extremely fast, (tr + tf) ≤ (t_{CYC6} - t_{EWLW} - t_{EWHR}) for (tr + tf) ≤ (t_{CYC6} - t_{EWLR} - t_{EWHR}) are specified.

Note2: All timing is specified using 20% and 80% of VDD as the reference.

Note3: t_{EWLW} and t_{EWLR} are specified as the overlap between CS1 being 'L' (CS2 = 'H') and EP.

IC Specification

See The Reference of SUNPLUS Data Book----SPLC501C

PIN assignment

Pin	Symbol	Function
1	/CS1	This is the chip select signal .When CS1= “L” and CS2= “H”,then the chip select becomes active,and data/command I/O is enabled
2	/RES	When /RES is set to “L” ,the setting are initialized The /RES operation is performed by the /RES signal level
3	A0	Select register. 0:Instruction register (for write) Busy flag &address counter(for read) 1:Data register(for write and read).
4	/WR	Read/write select signal.
5	RD	Operation (data read/write) enable signal.
6	DB0	This is an 8-bit bi-directional data bus that connects to an 8-bit or 16-bit standard MPU data bus. When the serial interface is selected,then DB7 serves as the serial data input terminal and DB6 serves as the serial clock input terminal.At this time,DB0-DB5 are set to high impedance. When the chip select is inactive,DB0 to DB7 are set to high impedance.
7	DB1	
8	DB2	
9	DB3	
10	DB4	
11	DB5	
12	DB6	
13	DB7	
14	VDD	Power supply for logic
15	VSS	Ground.
16	VOUT	DC/DC voltage converter output
17	CAP3-	Capacitor3- for internal DC/DC voltage converter
18	CAP1+	Capacitor1+ for internal DC/DC voltage converter
19	CAP1-	Capacitor1- for internal DC/DC voltage converter
20	CAP2-	Capacitor2- for internal DC/DC voltage converter

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21	CAP2+	Capacitor2+ for internal DC/DC voltage converter																														
22	V1	<p>LCD driver supply voltages.The voltage determined by LCD cell is impedance-converted by a resistive driver or an operation amplifier for application .Voltages should be the following relationship:</p> <p style="text-align: center;">$V0 > V1 > V2 > V3 > V4 > VSS$</p> <p>When the on-chip operating power circuit is on,the following are given to V1 to V4 by the on-chip power circuit .Voltage selection is performed by the set LCD bias command.</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>LCD BIAS</th> <th>V1</th> <th>V2</th> <th>V3</th> <th>V4</th> </tr> </thead> <tbody> <tr> <td>1/5BIAS</td> <td>4/5V0</td> <td>3/5V0</td> <td>2/5V0</td> <td>1/5V0</td> </tr> <tr> <td>1/6 BIAS</td> <td>5/6V0</td> <td>4/6 V0</td> <td>2/6 V0</td> <td>1/6 V0</td> </tr> <tr> <td>1/7 BIAS</td> <td>6/7 V0</td> <td>5/7 V0</td> <td>2/7 V0</td> <td>1/7 V0</td> </tr> <tr> <td>1/8 BIAS</td> <td>7/8 V0</td> <td>6/8 V0</td> <td>2/8 V0</td> <td>1/8 V0</td> </tr> <tr> <td>1/9 BIAS</td> <td>8/9 V0</td> <td>7/9 V0</td> <td>2/9 V0</td> <td>1/9 V0</td> </tr> </tbody> </table>	LCD BIAS	V1	V2	V3	V4	1/5BIAS	4/5V0	3/5V0	2/5V0	1/5V0	1/6 BIAS	5/6V0	4/6 V0	2/6 V0	1/6 V0	1/7 BIAS	6/7 V0	5/7 V0	2/7 V0	1/7 V0	1/8 BIAS	7/8 V0	6/8 V0	2/8 V0	1/8 V0	1/9 BIAS	8/9 V0	7/9 V0	2/9 V0	1/9 V0
LCD BIAS	V1		V2	V3	V4																											
1/5BIAS	4/5V0		3/5V0	2/5V0	1/5V0																											
1/6 BIAS	5/6V0		4/6 V0	2/6 V0	1/6 V0																											
1/7 BIAS	6/7 V0		5/7 V0	2/7 V0	1/7 V0																											
1/8 BIAS	7/8 V0		6/8 V0	2/8 V0	1/8 V0																											
1/9 BIAS	8/9 V0	7/9 V0	2/9 V0	1/9 V0																												
23	V2																															
24	V3																															
25	V4																															
26	V5																															
27	VR	Voltage adjustment pad.Applies voltage between V5 and VSS using a resistive divider																														
28	C86	<p>C86= "H" :6800 series MPU interface</p> <p>C86= "L" :8080 series MPU interface</p>																														
29	PS	<p>P/S= "H" :Parallel data input</p> <p>P/S= "L" :serial data input</p>																														
30	IRS	<p>IRS= "H" Use the internal resistors</p> <p>IRS= "L" Donot use the internal resistors</p>																														

Instruction Table

Command	Command Code											Function	
	A0P	RD	WR	DB7	DB6	DB5	DB4	DB3	DB2	DB1	DB0		
1). Display ON/OFF	0	1	0	1	0	1	0	1	1	1	0	LCD display ON/OFF 0: OFF, 1: ON	
2). Display start line set	0	1	0	0	1	Display start address					1	Sets the display RAM display start line address	
3). Page address set	0	1	0	1	0	1	1	Page address				1	Sets the display RAM page address
4). Column address set upper bit	0	1	0	0	0	0	1	Most significant column address				1	Sets the most significant 4 bits of the display RAM column address.
Column address set lower bit	0	1	0	0	0	0	0	Least significant column address				1	Set the least significant 4 bits of the display RAM column address.
5). Status read	0	0	1	Status				0	0	0	0	Reads the status data	
6). Display data write	1	1	0	Write data								0	Writes to the display RAM
7). Display data read	1	0	1	Read data								0	Reads from the display RAM
8). ADC select	0	1	0	1	0	1	0	0	0	0	0	1	Sets the display RAM address SEG output correspondence 0: normal, 1:reverse
9). Display normal/reverse	0	1	0	1	0	1	0	0	1	1	0	1	Sets the LCD display normal/ reverse 0: normal, 1:reverse
10). Display all points ON/OFF	0	1	0	1	0	1	0	0	1	0	0	1	Display all points 0: normal display 1: all points ON
11). LCD bias set	0	1	0	1	0	1	0	0	0	1	0	1	Sets the LCD driver voltage bias ratio SPLC501C.....0:1/9, 1:1/7
12). Read/modify/write	0	1	0	1	1	1	0	0	0	0	0	0	Column address increment At write: +1 At read: 0
13). End	0	1	0	1	1	1	0	1	1	1	0	0	Clear read/modify/write
14). Reset	0	1	0	1	1	1	0	0	0	1	0	0	Internal reset
15). Common output mode select	0	1	0	1	1	0	0	0	*	*	*	1	Select COM output scan direction 0: normal direction, 1: reverse direction
16). Power control set	0	1	0	0	0	1	0	1	Operating mode			0	Select internal power supply operating mode
17). V _s voltage regulator internal resistor ratio set	0	1	0	0	0	1	0	0	Resistor ratio			0	Select internal resistor ratio (Rb/Ra) mode
18). Electronic volume mode set	0	1	0	1	0	0	0	0	0	0	0	1	Set the V _s output voltage electronic volume register
Electronic volume register set	0	1	0	*	*	Electronic volume value					0		

Command	Command Code										Function		
	A0P	RD	WR	DB7	DB6	DB5	DB4	DB3	DB2	DB1		DB0	
19). Static indicator ON/OFF Static indicator Register set				1	0	1	0	1	1	0	0	1	0: OFF, 1: ON Set the flashing mode
20). Page Blink Page selection	0	1	0	1	1	0	1	0	1	0	1	P7 - 0: 1 - blinking page 0 - no blinking, normal display	
21). Driving Mode Set Mode selection	0	1	0	1	1	0	1	0	0	1	0	Set the driving mode register Driving capability (D1, D0): (1,1)>(0,0)>(0,1)>(1,0)	
22). Power saver												Display OFF and display all points ON compound command	
23). NOP	0	1	0	1	1	1	0	0	0	1	1	Command for non-operation	
24). Test	0	1	0	1	1	1	1	*	*	*	*	Command for IC test. Do not use this command	

Instruction Description

1. Display on/off

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	0	1	0	1	1	1	-

D0=1 Display on

D0=0 Display off

2. Set Display Start Line

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	0	1	ST5	ST4	ST3	ST2	ST1	ST0

ST5	ST4	ST3	ST2	ST1	ST0	Line address
0	0	0	0	0	0	0
0	0	0	0	0	1	1
.
1	1	1	1	1	0	62
1	1	1	1	1	1	63

3. Set Page address

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	0	1	1	P3	P2	P1	P0

P3	P2	P1	P0	Page
----	----	----	----	------

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0	0	0	0	0
0	0	0	1	1
.
0	1	1	1	7
1	0	0	0	8

4. Set Column Address

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	0	0	0	0	Y7	Y6	Y5	Y4
0	1	0	0	0	0	0	Y3	Y2	Y1	Y0

Y4-Y7 :Higher bits

Y0-Y3 :Lower bits

Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0	Column address
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	1
.
0	1	0	1	1	1	1	0	94
0	1	0	1	1	1	1	1	95

5. Read status

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	0	1	status				0	0	0	0

6. Write display data

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
1	1	0	write data							

7. Read display data

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
1	0	1	read data							

8. ADC Select

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	0	1	0	0	0	0	-

D0=1 Display Reverse

D0=0 Display Normal

9. Normal/Reverse Display

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	0	1	0	0	1	1	D

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When **D=1** Reverse Display

D=0 Normal Display

10. Entire Display on/off

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	0	1	0	0	1	0	D

When **D=0** Normal Display **D=1** Reverse Display

11. Set LCD Bias

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	0	1	0	0	0	1	D

When **D=0** Bias=1/9

D=1 Bias=1/7

12. Read-modify-write

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	1	1	0	0	0	0	0

13. End

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	1	1	0	1	1	1	0

14. Reset

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	1	1	0	0	0	1	0

15. Command output mode select

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	1	0	0	D	*	*	*

16. Set Power Control

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	0	0	1	0	1	A2	A1	A0

When **A0=1** Follower Circuit Is Turn on

A1=1 Regulator Circuit Is Turn on

A2=1 Booster Circuit Is Turn on

17. V5 Voltage Regulator Internal Resistor Ratio Set

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	0	0	1	0	0	R2	R1	R0

18.The Electronic Volume Mode set

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	0	0	0	0	0	0	1

19.Electronic Volume Register Set

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	0	0	SV5	SV4	SV3	SV2	SV1	SV0

20.Static Indicator on/off

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	0	1	0	1	1	0	D

When **D=0**: Static Indicator Off **D=1**:Static Indicator On

21. Page blinking

The page blinking mode set

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	0	1	0	0	1	0	1

Page blinking register set

A0	RD	WR	DB7	DB6	DB5	DB4	DB3	DB2	DB1	DB0	BlinkingPage
0	1	0	1	0	0	0	0	0	0	0	Page7 blink
0	1	0	0	1	0	0	0	0	0	0	Page6 blink
0	1	0	0	0	1	0	0	0	0	0	Page5 blink
0	1	0
0	1	0	0	0	0	0	0	0	0	1	Page0 blink

22. Set Driving Mode Set

The driving mode set

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	1	0	1	0	0	1	0

Mode selection register set

A0	RD	WR	DB7	DB6	DB5	DB4	DB3	DB2	DB1	DB0	Driving selection
0	1	0	1	1	0	0	0	0	0	0	Mode1
0	1	0	0	0	0	0	0	0	0	0	Mode2
0	1	0	0	0	1	0	0	0	0	0	Mode3
0	1	0	1	0	0	0	0	0	0	1	Mode4

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23. Nop

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	1	1	0	0	0	1	1

24. Test

A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0
0	1	0	1	1	1	1	*	*	*	*

Application Example

Application circuit

P1.0	DB0
P1.1	DB1
P1.2	DB2
P1.3	DB3
P1.4	DB4
P1.5	DB5
P1.6	DB6
P1.7	DB7
P3.0	RD
P3.1	WR
P3.2	A0
P3.3	/RES
P3.4	/CS1

8951 **SPLC501C**

Company Profile

XIAMEN OCULAR LCD DEVIDES CO.,LTD. Was formed in 1992. Our company is a joint-venture specializing in manufacturing all kinds of Liquid Crystal Displays. We design and massproduce Touch Panel,LED,COG, the digital segment, dot matrix LCD panels, and modules in TN,HTN and STN types using the advanced and whole facilities and soft-ware technology.

Most of our products are customer_mode. Xiamen Ocular's LCDs now have a good sale not only in domextic China,but also in America,Europe and East_south Aisa.These LCDs were widely used in the display of instruments,clocks,telecommunication equipments,calcuators,air conditioner controllers and AV systems.

Based upon the reliable high quality, reasonable price and quick delivery, Xiamen Ocular will sever all customers wholeheartedly.

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