

Hong Kong Panox Electronics Co.,Ltd

LCM Specification

() Preliminary Specification

() Final Specification

Customer:	
Part NO:	C0283QGL-SPiRGB
Product type:	Mode: Transmissive type .Normally white. TFT LCD Module
Remarks:	<input type="checkbox"/> APPROVAL FOR SEPCIFICATIONS ONLY <input checked="" type="checkbox"/> APPROVAL FOR SEPCIFICATIONS AND SAMPLE
Signature by Customer: 客户确认签章	

2. Features

Display Mode	Transmissive type
	2.8" Active matrix TFT-LCD
Display Format	Graphic 240RGB*320t-matrix
Driver IC	ILI9341
Display color	262K colors
Luminance	350 cd/m ² (Typ)
Interface	SPI+RGB18Bit parallel interface
Viewing Direction	12.O'CLOCK (Gray Scale Reverse)
Back Light	Light Emitting Diode (LED), 6 s connected in parallel

3. Mechanical Specification

Item	Specifications	Unit	Remarks
Dimensional Outline	48.7(W)* 68.3 (H)*2.2	mm	FPC not include
Resolution	240(RGB)(W)* 320(H)pixels	dots	
LCD Active Area	43.2(W)* 57.60(H)	mm	
Pixel Size	0.153(W)* 0.153(H)	mm	
Weight	T.B.D	g	

4. Electrical Characteristics

Item		Symbol	Min.	Typ.	Max.	Unit	Remarks
Power Supply	Analog	VDD	2.5	2.8	3.3	V	
	Logic	VDDIO	1.65	2.8	3..3	V	
Current for LCD		IVDD	-	-	15	mA	
LEDs Forward Voltage		VF	17.4	19.2	20.2	V	
LEDs Forward Current		IF	-	20		mA	6 LEDs in serial,,20mA
Frame Frequency		FFRAM E		80		Hz	Frame Inversion
Storage temperature		TOPR	-20	-	70	°C	
Storage temperature		TSTR	-30	-	80	°C	

7. Pin Descriptions

Pin No.	Signal	Discription
1	LED+	+4. 6V
2	NC	No Connectinon
3	VCC	Power supply
4	NC	No Connectinon
5	GND	Ground
6-12	NC	No Connectinon
13	FMARK	Tearing effect output pin to synchronize MPU to frame writing,
14-19	NC	No Connectinon
20	VCC	Power supply
21-22	NC	No Connectinon
23-40	DB17-DB0	Data Bus
41	VCYNC	Vertical sync signal
42	HSYNC	Horizontal sync signal
43	PCLK	Dot clock signal.
44	DE	Data enable
45	SDI	Serial data input pin in serial interface operation.
46	SDO	Serial output signal.
47	CS	Chip select signal input terminal

48	SCL	serial interface clock
49-50	NC	No Connectinon
51	RESET	Reset signal input terminal.
52-53	NC	No Connectinon
54	VCC	Power supply
55-56	NC	No Connectinon
57	GND	Ground
58	X- (NC)	No Connectinon
59	Y- (NC)	No Connectinon
60	X+ (NC)	No Connectinon
61	Y- (NC)	No Connectinon

8. OPTICAL SPECIFICATIONS(Ta=25°C)

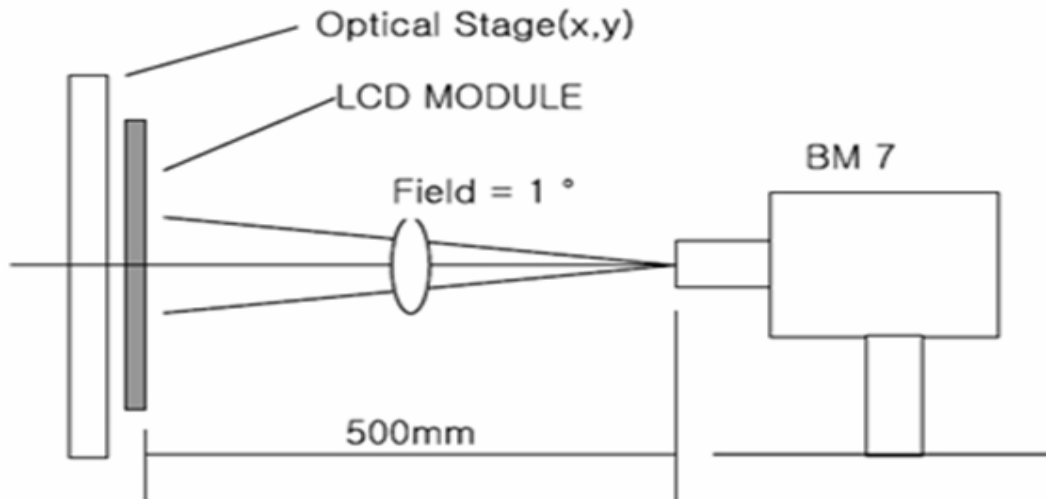
Item		Symbol	Min	Typical	Max	Unit	Remarks
LED module Forward voltage		VLED	17.4	19.2	20.2	V	
LED module current		VLED	-	20		mA	
LCM Surface brightness uniform ★2		LD		80		%	
Response Time		Tr+Tf	-	30	40	ms	
Color Coordinate	RED	XR	0.579	0.609	0.639		IBL=20mA Full White Pattern
		YR	0.302	0.332	0.360		
	GREEN	XG	0.270	0.300	0.330		
		YG	0.536	0.566	0.569		
	BLUE	XB	0.112	0.142	0.172		
		YB	0.082	0.112	0.142		
	WHITE	Xw	0.275	0.305	0.335		
		Yw	0.299	0.329	0.359		

★ 1 Test condition is:

- (a) Center point on active area.
- (b) Best Contrast.

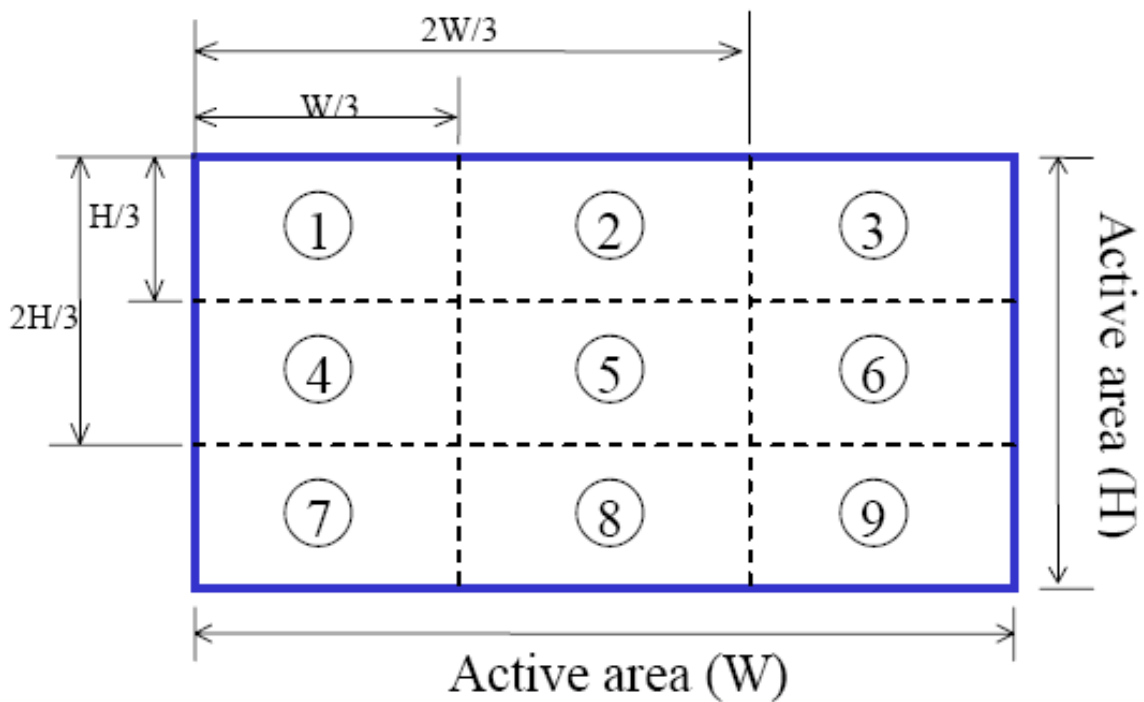
★2 Uniform measure condition:

- (1) Measure 9 point. Measure location show below;
- (2) Uniform=(Min. brightness /Max. brightness)*100%
- (3) Best Contrast.



<Transmissive Mode>

Optical Characteristic Measurement Equipment and method



Main Measuring point

9. Timing characteristics.

Item		Symbol	Unit	Min.	Typ.	Max.	Test Condition
Bus cycle time	Write	t_{CYCW}	ns	100			
	Read	t_{CYCR}	ns	300			
Write low-level pulse width		PW_{LM}	ns	50		-	
Write high-level pulse width		PW_{HW}	ns	50			
Read low-level pulse width		PW_{LR}	ns	150			
Read high -level pulse width		PW_{HR}	ns	150			
Write/ Read rise/fall time		t_{WRr}/t_{WRf}	ns			25	
Setup time	Write(RS to nCS,E/nWR)	ns	ns	10			
	Read (RS to nCS,E/nWR)	ns	ns	5			
Address hold time		T_{AH}	ns	5			
Write data set up time		t_{osw}	ns	10			
Write data hold time		t_H	ns	15			
Read data set up time		t_{DDR}	ns			100	
Read data hold time		t_{OHR}	ns	5			

Note:I80-System Interface Timing Characteristics

Normal Wrote Mode($IOVCC=1.65\sim 3.3V, Vcc=2.4\sim 3.3V$)

10.Read Timing Characteristics

Reset Timing Characteristics($VCC=1.8\sim 3.3V, IOVCC=1.65\sim 3.3V$)

Item	Symbol	Unit	Min.	Typ..	Max	Remarks
Reset low-level width	t_{RES}	ms	1			
Reset rise time	t_{RES}	μS			10	

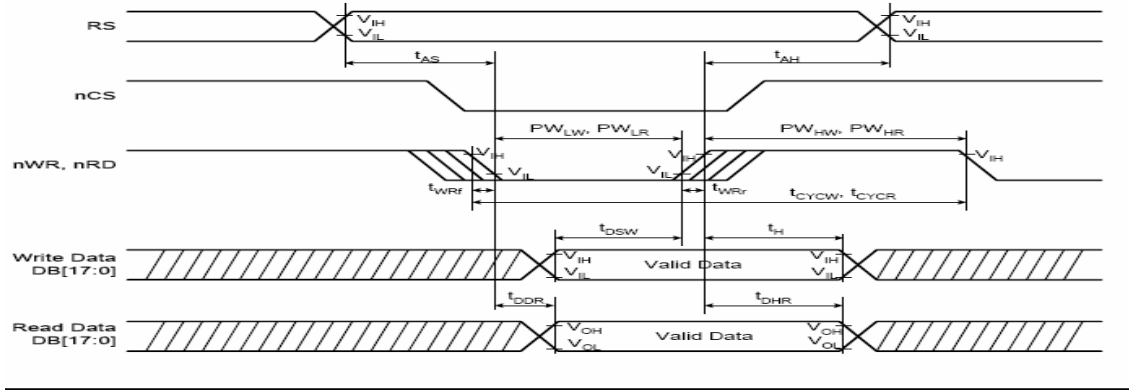
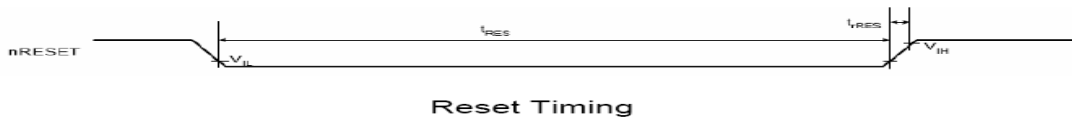


Figure 51 i80-System Bus Timing



11. Electro-optical Characteristics

Item	Symbol	Conditions	Temp	Min.	Typ.	Max.	Unit	Note
Response Time	T_R	$\theta = \phi = 0$	25°C		TBD	TBD	msec	NOTE1
	T_F				TBD	TBD		
Viewing Angle Range	$\phi = 0^\circ (6'')$	$\phi = 90^\circ (3'')$	$\phi = 180^\circ (12'')$			$\phi = 270^\circ (9'')$		NOTE2
$\theta (25^\circ C) CR \geq 10$	TBD	TBD	TBD			TBD		NOTE3

The above “viewing angle” is the measuring position with the largest contrast ratio. Not for good image quality. Viewing direction for good image quality is 12 O’clock.

- For panel only
- Electro-Optical Characteristics Test Method

