

**AM-480272QTZW-01H**









## 5. INTERFACE

### 5.1 TFT INTERFACE

Pin No	Symbol	Function
1	GND	Power Ground
2	GND	Power Ground
3	NC	No connection
4	NC	No connection
5	NC	No connection
6	NC	No connection
7	VDDIO	Power Supply for digital Interface I/O
8	VDD	Power supply for digital circuit
9	VDD	Power supply for digital circuit
10	VS	Vertical sync signal
11	HS	Horizontal sync signal
12	GND	Power Ground
13	DCLK	Clock signal
14	GND	Power Ground
15	DE	Data input enable. MODE=L: Active High to enable the data input (SYNC+DE mode). MODE=H: connect to low level (SYNC mode).
16	L/R	Horizontal scan direction control
17	U/D	Vertical scan direction control
18	CS	Serial communication chip select(floating type)
19	SDA	Serial communication input and output(floating type)
20	SCL	Serial communication clock input(floating type)
21	DISP	Display control/standby mode selection
22	RESET	Global reset, Active low, Internal pull high
23	MODE	SYNC or DE mode selection
24	DR7	Red Data 7 (MSB)
25	DR6	Red Data 6
26	DR5	Red Data 5
27	DR4	Red Data 4
28	DR3	Red Data 3
29	DR2	Red Data 2
30	DR1	Red Data 1
31	DR0	Red Data 0 (LSB)
32	DG7	Green Data 7 (MSB)
33	DG6	Green Data 6
34	DG5	Green Data 5
35	DG4	Green Data 4
36	DG3	Green Data 3
37	DG2	Green Data 2
38	DG1	Green Data 1
39	DG0	Green Data 0 (LSB)
40	DB7	Blue Data 7 (MSB)

41	DB6	Blue Data 6
42	DB5	Blue Data 5
43	DB4	Blue Data 4
44	DB3	Blue Data 3
45	DB2	Blue Data 2
46	DB1	Blue Data 1
47	DB0	Blue Data 0 (LSB)
48	VDD	Power supply for digital circuit
49	GND	Power Ground
50	GND	Power Ground
51	VBL+	LED backlight Anode
52	VBL+	LED backlight Anode
53	VBL-	LED backlight Cathode
54	VBL-	LED backlight Cathode

Note(1) When Mode=1 , SYNC mode  
When Mode=0, SYNC+DE mode

Note(2) When DISP=1, Normal Display  
When DISP=0, Standby Mode

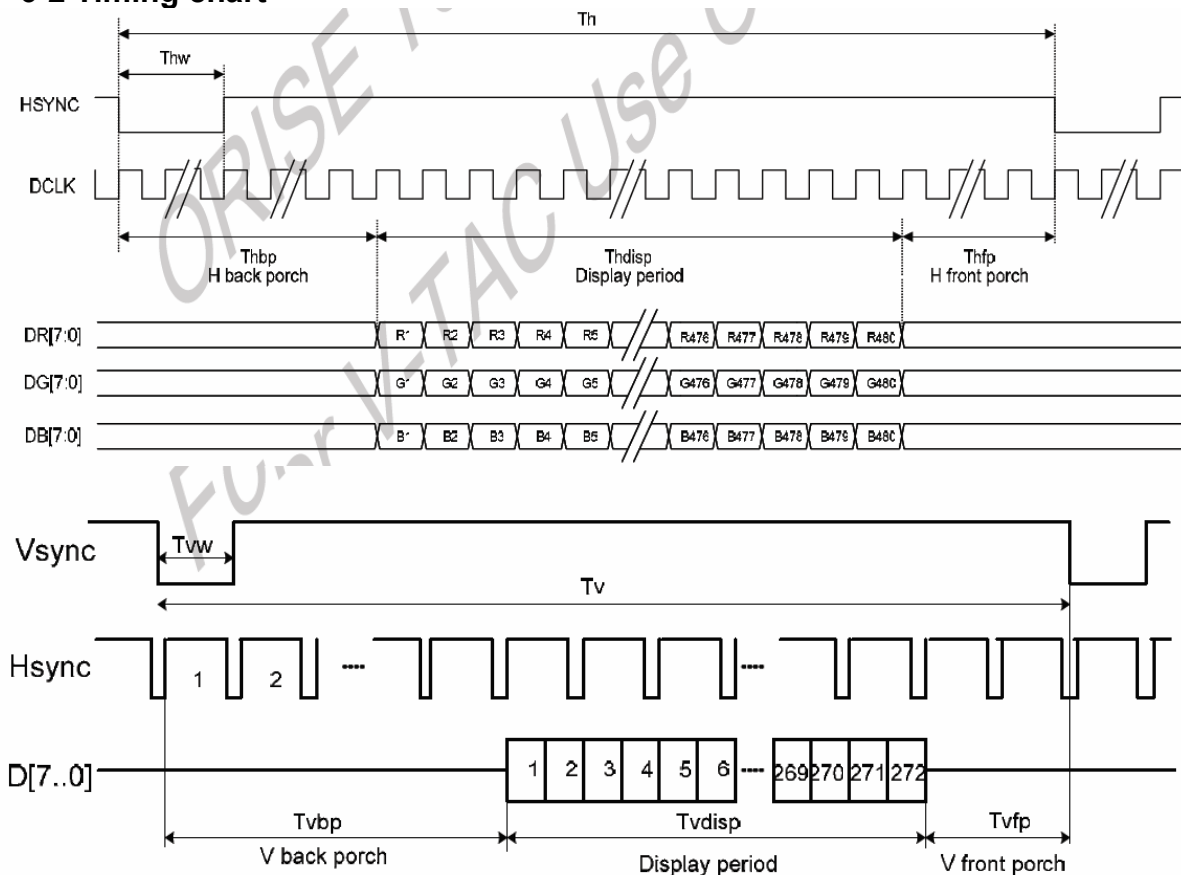
Note(3) Please keep CS SDA SCL in floating type

## 6. INPUT SIGNAL :

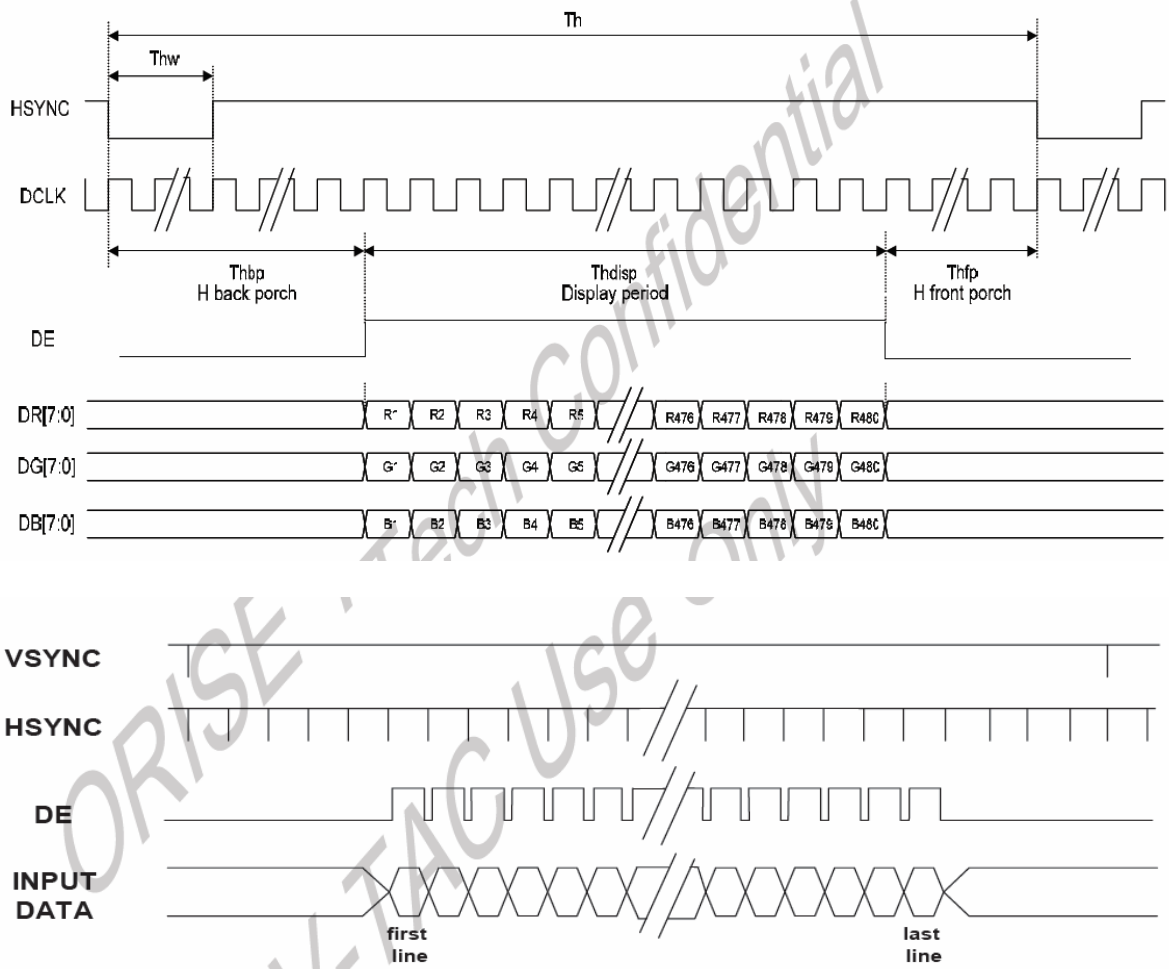
### 6-1 Timing Specification.

Item	Symbol	Min.	Typ.	Max.	Unit		
DCLK Frequency	Fclk	5	9	12	MHz		
DCLK Period	Tclk	83	110	200	ns		
Hsync	Period Time	Th	490	531	605	DCLK	
	Display Period	Thdisp		480		DCLK	
	Back Porch	Thbp	8	43		DCLK	By H_BLANKING setting
	Front Porch	Thfp	2	8		DCLK	
	Pulse Width	Thw	1			DCLK	
Vsync	Period Time	Tv	275	288	335	H	
	Display Period	Tvdisp		272		H	
	Back Porch	Tvbp	2	12		H	By V_BLANKING setting
	Front Porch	Tvfp	1	4		H	
	Pulse Width	Tvw	1	10		H	

### 6-2 Timing chart







### 6-3 Color Data Assignment

COLOR	Input Data	R DATA						G DATA						B DATA					
		R5 MSB	R4	R3	R2	R1	R0 LSB	G5 MSB	G4	G3	G2	G1	G0 LSB	B5 MSB	B4	B3	B2	B1	B0 LSB
BASIC COLOR	BLACK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED(63)	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	GREEN(63)	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
	BLUE(63)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
	CYAN	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
	MAGENTA	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1
	YELLOW	1	1	1	1	1	1	1	1	1	1	1	1	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
RED	RED(0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED(1)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	RED(2)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED(62)	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED(63)	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
GREEN	GREEN (0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GREEN (1)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	GREEN (2)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	GREEN (62)	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0
	GREEN (63)	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
BLUE	BLUE (0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	BLUE (1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	BLUE (2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	BLUE (62)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	BLUE (63)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

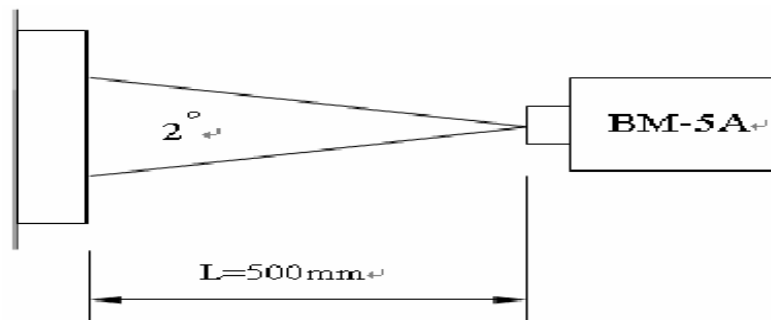
NOTE : (1) Definition of Gray Scale , Color(n) : n is series of Gray Scale  
The more n value is the bright Gray Scale  
(2) Data : 1-High , 0-Low

## 7. OPTICAL CHARACTERISTICS

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Note	
Contrast ratio	CR	Point - 5 $\Theta = \Phi = 0^\circ$	--	500	--	--	(1)(2)(3)	
Luminance	Lw		--	500	-	cd/m <sup>2</sup>	(1)(3)	
Luminance Uniformity	$\Delta L$		70	75	-	%	(1)(3)	
Response Time ( White – Black )	$T_r + T_f$		--	35	--	ms	(1)(3)(5)	
Viewing Angle	Horizontal	$\Phi$	CR > 10	--	160	-	Deg.	(1)(2)(4)
	Vertical	$\Theta$		--	160	-		
Color chromaticity	Red	Rx	Point - 5 $\Theta = \Phi = 0^\circ$	0.59	0.64	0.69	--	(1)(3)
		Ry		0.29	0.34	0.39		
	Green	Gx		0.30	0.35	0.40		
		Gy		0.54	0.59	0.64		
	Blue	Bx		0.06	0.11	0.16		
		By		0.05	0.10	0.15		
	White	Wx		0.26	0.31	0.36		
		Wy		0.30	0.35	0.40		

NOTE :

- (1) Measure conditions :  $25^\circ\text{C} \pm 2^\circ\text{C}$  ,  $60 \pm 10\% \text{RH}$  under 10Lux , in the dark room by BM-7TOPCON) , viewing  $2^\circ$  , VDD=3.3V



- (2) Definition of Contrast Ratio :

**Contrast Ratio (CR) = (White) Luminance of ON ÷ (Black) Luminance of OFF**

- (3) Definition of Luminance :

Definition of Luminance Uniformity

Measure white luminance on the point 5 as figure9-1

Measure white luminance on the point 1 ~ 9 as figure9-1

$$\Delta L = [ L(\text{MIN}) / L(\text{MAX}) ] \times 100\%$$

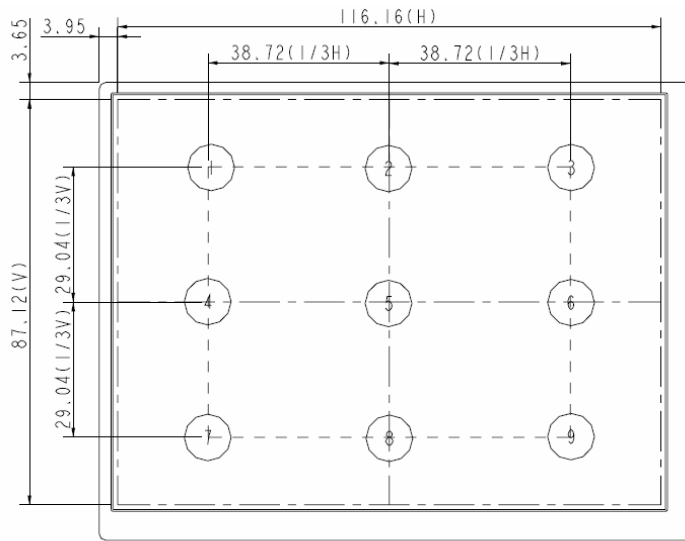


Fig9-1 Measuring point

(4) Definition of Viewing Angle( $\Theta, \Phi$ ), refer to Fig9-2 as below :

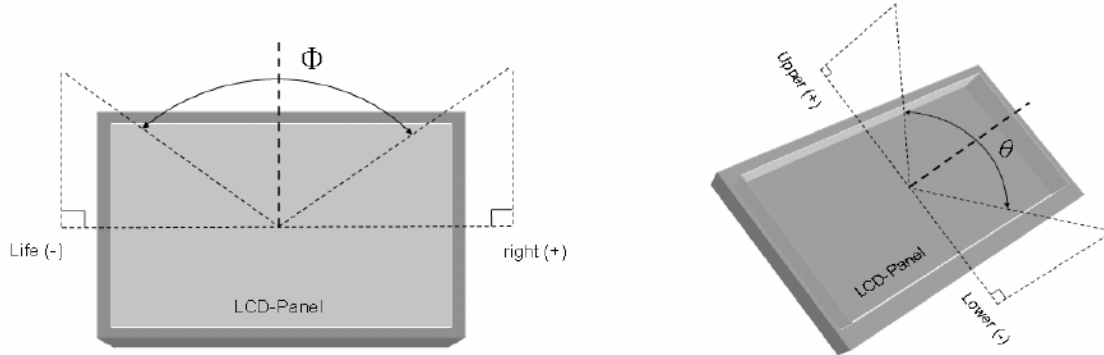


Fig9-2 Definition of Viewing Angle

(5) Definition of Response Time.(White – Black)

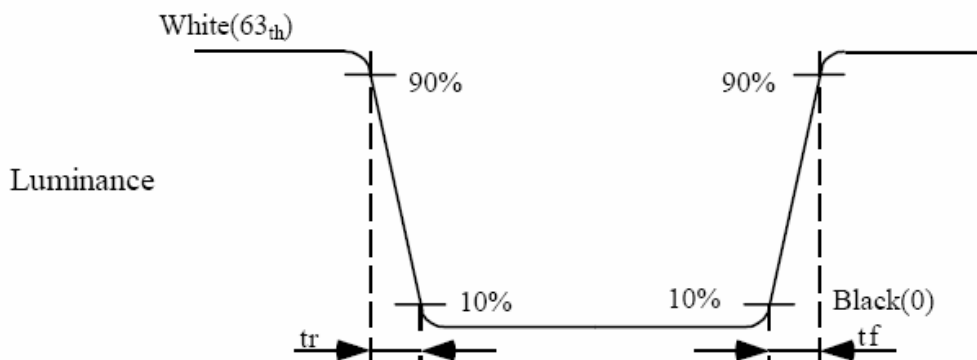


Fig9-3 Definition of Response Time(White-Black)

## 8. RELIABILITY TEST CONDITIONS

ITEM	CONDITIONS
HIGH TEMPERATURE OPERATION	80°C , 240Hrs
HIGH TEMPERATURE AND HIGH HUMIDITY OPERATION	60°C , 90%RH , 240Hrs
HIGH TEMPERATURE STORAGE	85°C , 240Hrs
LOW TEMPERATURE OPERATION	-30°C , 240Hrs
LOW TEMPERATURE STORAGE	-40°C , 240Hrs
THERMAL SHOCK	-30°C (1Hr) ~80°C (1Hr) 100Cycle

### 8.1 OTHERS

AMIPRE will provide one year warranty for all products and three months warrantee for all repairing products.

# 9. OUTLINE DIMENSION

