晶采光電科技股份有限公司
AMPIRE CO., LTD.

SPECIFICATIONS　FOR
LCD　MODULE

CUSTOMER	
CUSTOMER PART NO.	
AMPIRE PART NO.	AM-1024600H4TMQW-T00H
APPROVED　BY	
DATE	

☐ **Approved For Specifications**
☐ **Approved For Specifications & Sample**

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RECORD   OF   REVISION

Revision Date	Page	Contents	Editor
2019/01/09	-	New Release	Mark
2020/12/14	3	Update General information	Tank

1. GENERAL DESCRIPTION

1.1 Introduction

This is a color active matrix thin film transistor (TFT) liquid crystal display (LCD) that uses amorphous silicon TFT as a switching device. This model is composed of a TFT LCD panel, a driving circuit and a back light system. This TFT LCD has a 10.1 (16:9) inch diagonally measured active display area with WVGA (1024 horizontal by 600 vertical pixels) resolution.

1.2 Features

- 10.1" (16:9 diagonal) Inch configuration.
- 16.2M color by 6 bit +Hi-FRC input
- 1024600L3 REV.C PCB with DC/DC
- External LED Driver Board
- Projective Capacitive Touch
    - Interface : I2C
    - Touch Controller: ILI2511
    - Cover Lens :
        - Tempered Soda Lime Glass : T=1.0mm
        - Black border (Pantone :Black)

1.3 General information

Item		Specifications	unit
Outline Dimension		255.0 x 165.8 x 10.67	mm
Display area		222.72(H) x 125.28(V)	mm
Number of Pixel		1024 RGB (H) x 600(V)	Pixels
Pixel pitch		0.2175(H) x 0.2088(V)	mm
Pixel arrangement		RGB Vertical stripe	
Display mode		Normally white	
Back-light		White LED	
Power Consumption Display only	B/L system	2.688 (typ.)	W

2. ABSOLUTE MAXIMUM RATINGS

2.1 Electrical Absolute Rating

2.1.1 TFT LCD Module

Item	Symbol	Values		UNIT	Note
		Min.	Max.		
LED driver Power Supply Voltage	V_{LED}	-0.3	15.0	V	GND=0
Logic Supply Voltage	V_{DD}	-0.3	5.0	V	
Operating Temperature	T_{OPA}	-20	70	^{o}C	
Storage Temperature	T_{STG}	-30	80	^{o}C	

2.1.2 Backlight unit

Item	Symbol	Typ.	Max.	Unit	Note
LED current	I_L	140	-	mA	(1) (2)(3)
LED voltage	V_L	19.2	20.4	V	(1) (2)(3)
LED reverse voltage	V_R	--	5	V	
LED forward current	I_F		20	mA	

Note:

(1) Permanent damage may occur to the LCD module if beyond this specification. Functional operation should be restricted to the conditions described under normal operating conditions.

(2) Ta =25±2℃

(3) Test Condition: LED current 140 mA. The LED lifetime could be decreased if operating IL is larger than 140mA.

3. OPTICAL CHARACTERISTICS

Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Contrast ratio		CR		400	500	--	--	(1)(2)(3)
Luminance		Lw		320	400	-	cd/m^2	(1)(3)
Luminance Uniformity		ΔL	Point - 5 $\Theta=\Phi=0°$	70	80	-	%	(1)(3)
Response Time (White – Black)		$T_r + T_f$		--	16	32	ms	(1)(3)(5)
Viewing Angle	Vertical	Θ	CR$\geqq$10 Point – 5	120	150	-	Deg.	(1)(2)(4)
	Horizontal	Φ		130	160	-		
Color chromaticity	Red	Rx	Point - 5 $\Theta=\Phi=0°$	0.555	0.605	0.655	--	(1)(3)
		Ry		0.277	0.327	0.377		
	Green	Gx		0.236	0.286	0.336		
		Gy		0.476	0.526	0.576		
	Blue	Bx		0.100	0.150	0.200		
		By		0.095	0.145	0.195		
	White	Wx		0.263	0.313	0.363		
		Wy		0.279	0.329	0.379		

NOTE :

(1) Measure conditions : 25℃±2℃ , 60±10%RH under 10Lux , in the dark room by
   BM-7TOPCON) ,viewing 2° , VCC=3.3V , VDD=3.3V
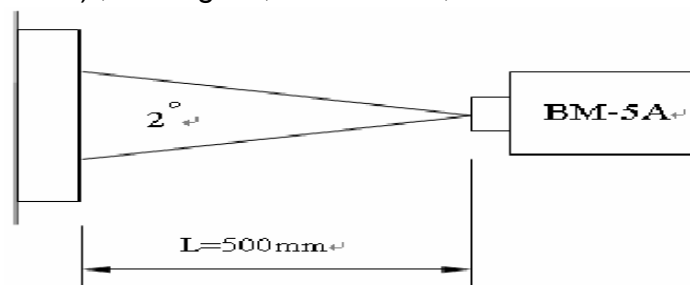
(2) Definition of Contrast Ratio :

   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

   ΔL = [L(MIN) / L(MAX)] X 100%
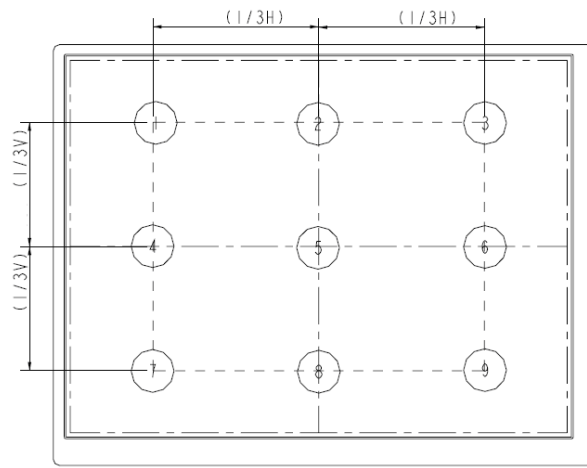
Fig9-1 Measuring point

(4) Definition of Viewing Angle(Θ,Φ), refer to Fig9-2 as below :
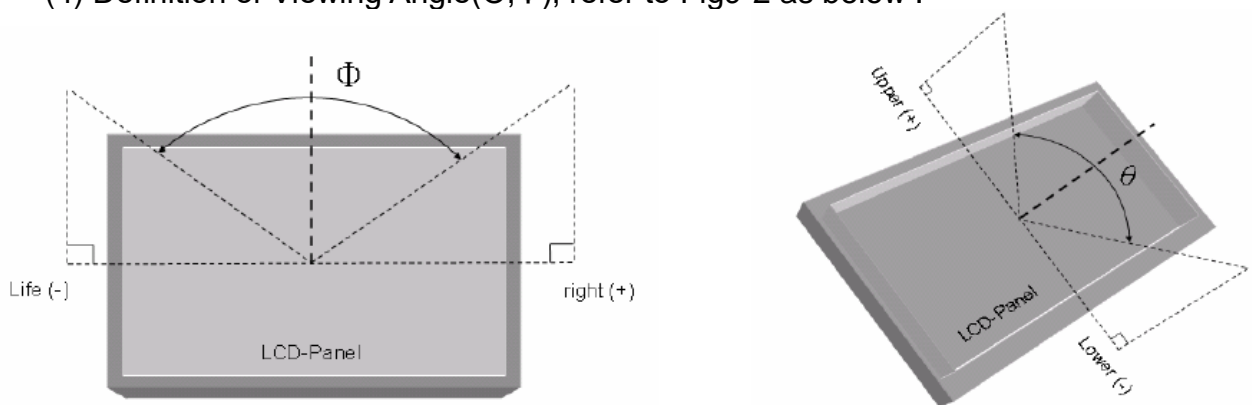

Fig9-2 Definition of Viewing Angle
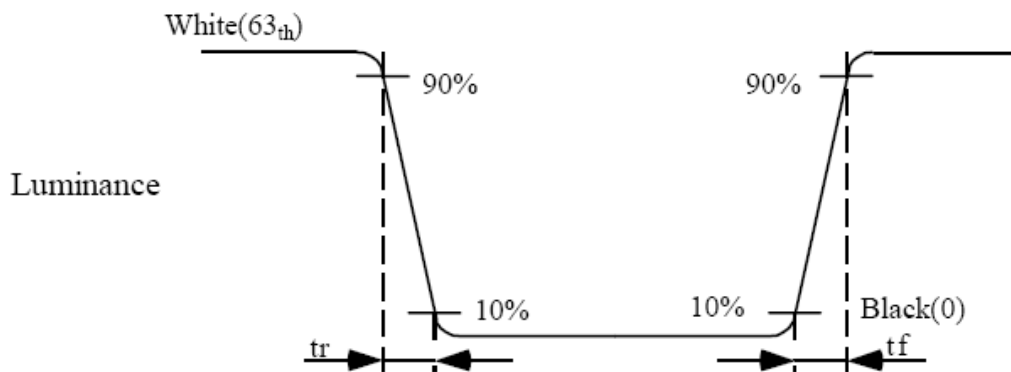
(5) Definition of Response Time.(White – Black)

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

(6) End of Life shall be determined by the time when any of the following is satisfied under continuous lighting at 25°C
   - Intensity drops to 50% of the Initial Value (Min. Luminance)
   - Based on LED
   - It is an estimative value

4. Pin Definition

4.1 TFT Module

CN1(Input signal): CSTAR DS100-430-H23 (equivalent JAE FI-XB30SSRL-HF16)

Pin No.	Symbol	Description	Note
1	GND	Ground	
2	VDD	3.3V Power	
3	VDD	3.3V Power	
4	V_EDID	3.3V Power for EDID	
5	NC	No connection	
6	CLK_EDID	EDID Clock Input	
7	DATA_EDID	EDID Data Input	
8	RXIN0-	LVDS Signal - channel0-	
9	RXIN0+	LVDS Signal+ channel0+	
10	GND	Ground	
11	RXIN1-	Data Input channel1-	
12	RXIN1+	Data Input channel1+	
13	GND	Ground	
14	RXIN2-	Data Input channel2-	
15	RXIN2+	Data Input channel2+	
16	GND	Ground	
17	RXCLKIN-	Data Input CLK-	
18	RXCLKIN+	Data Input CLK+	
19	GND	Ground	
20	NC	No connection	
21	NC	No connection	
22	GND	Ground	
23	GND	Ground	
24	NC	No connection	
25	NC	No connection	

26	NC	No connection	
27	NC	No connection	
28	NC	No connection	
29	NC	No connection	
30	NC	No connection	

CN2(LED backlight): BHSR-02VS-1 (JST or equivalent)

Pin No.	Symbol	Description	Note
1	A	Anode for LED backlight	
2	K	Cathode for LED backlight	

CN2(LED Driver Board): FPHTI-104TTW000(Kingfont or equivalent)

Pin No.	Symbol	Description	Note
1	+12V	Voltage for LED circuit (+12V)	
2	LED_EN	LED BLU ON/OFF	
3	GND	Power ground	
4	PWM	Adjust the LED brightness by PWM	

Note* : **The brightness of LCD panel could be changed by adjusting ADJ**

[Note]
(1) ADJ can adjust brightness to control Pin. Pulse duty the bigger the brighter.
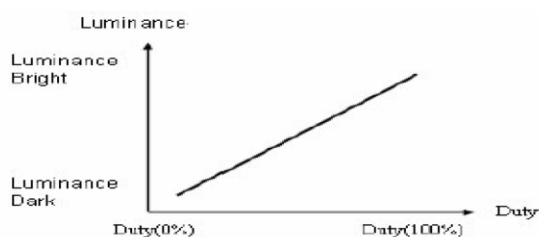
(2) ADJ Signal=0~3.3V，Operation Frequency：

Dimming Range		
PWM Frequency (F)	Duty Cycle (Min.)	Duty Cycle (Max.)
100Hz < F < 500Hz	5%	100%
500Hz < F < 20KHz	10%	100%

Duty Cycle = t / T *100%

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5 Back-Light Unit

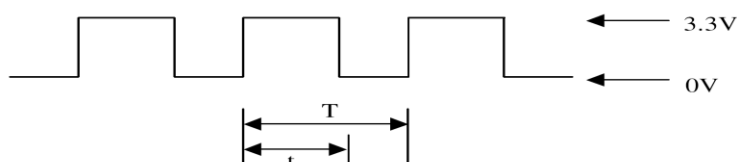| Item	Symbol	Values			Unit	Note
		Min.	Typ.	Max.		
LED Driver voltage	VLED	9	12	15	V	
Power Supply Current For LED Driver	ILED	-	330	-	mA	VLED=12V VADJ=3.3V (duty 100%)
ADJ Input Voltage	V_{ADJ}	-	3.3	VLED	V	duty=100%
LED voltage	VAK	--	19.2	20.4	V	I_L =140mA Ta=25℃
LED current	I_L	--	140	--	mA	Note (1)
LED Life Time	-	20K	30K	--	Hour	Note (2)

Note (1)   LED life time (Hr) can be defined as the time in which it continues to operate under the condition: Ta=25±3 ₒC, typical IL value indicated in the above table until the brightness becomes less than 50%.

Note (2)   The "LED life time" is defined as the module brightness decrease to 50% original brightness at Ta=25℃ and IL=140mA. The LED lifetime could be decreased if operating IL is larger than 140mA. The constant current driving method is suggested.

Note (3)   LED Light Bar Circuit
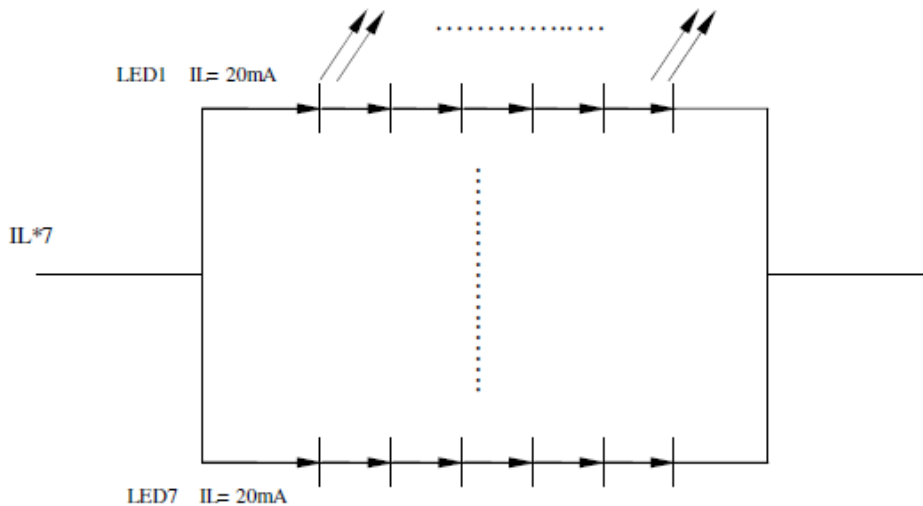
6 ELECTRICAL CHARACTERISTICS
6.1 TFT LCD Module

Item	Symbol	Values			UNIT	Note
		Min.	**Typ.**	**Max.**		
Power voltage	VDD	3.0	3.3	3.6	V	Note1
Current of power supply	IDD	-	0.3	-	A	**VDD=3.3V Black pattern**
Power voltage for LED driver	VLED	9.0	12.0	15.0	V	
LED driver current of power supply	ILED	-	330		mA	**VLED=12V ADJ=100%**

Note 1: **VDD-dip condition :**

> **when 2.7V≦VDD<3.0V，td≦10ms.**

> **VDD＞3.0V， VDD-dip condition should be same as VDD-turn-con condition.**

6.2　Switching Characteristics for LVDS Receiver

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Differential Input High Threshold	V_{th}	—	—	100	mV	$V_{CM}=1.2V$
Differential Input Low Threshold	V_{tl}	-100		—	mV	
Input Current	I_{IN}	-10	—	+10	uA	
Differential input Voltage	$|V_{ID}|$	0.1	—	0.6	V	
Common Mode Voltage Offset	V_{CM}	0.7	1.2	1.6	V	

6.3　Bit LVDS input

6.3.1 6bit LVDS input
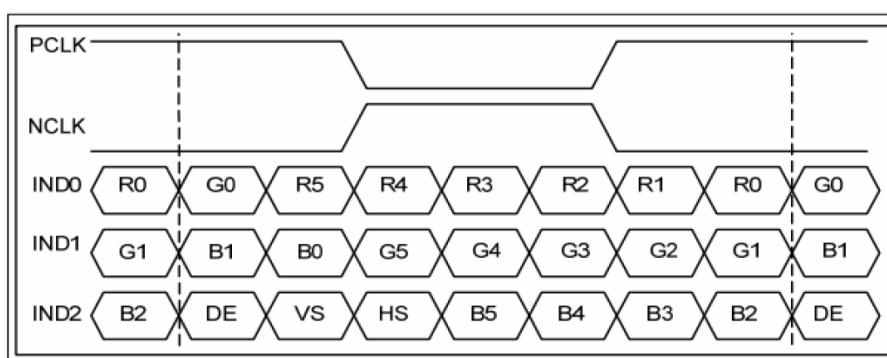
6.3.2 8Bit LVDS input
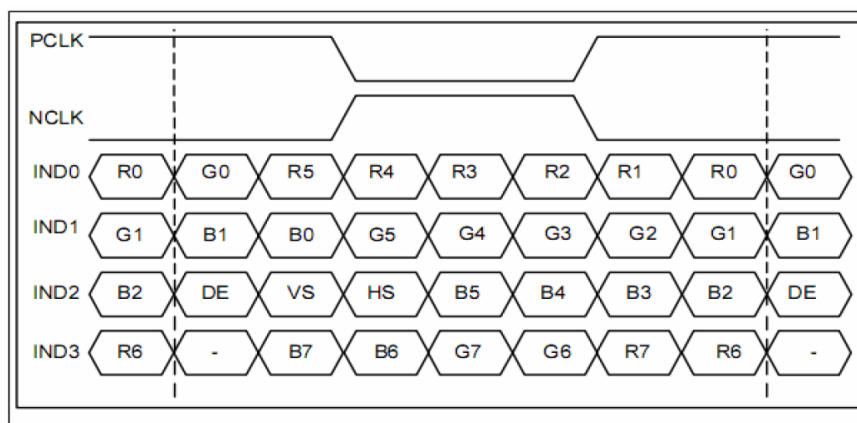
6.4　Interface Timing (DE mode)

Item	Symbol	Min.	Typ.	Max.	Unit
Frame Rate	--	55	60	65	Hz
Frame Period	t1	610	635	800	line
Vertical Display Time	t2	600	600	600	line
Vertical Blanking Time	t3	10	35	200	line
1 Line Scanning Time	t4	1164	1344	1400	clock
Horizontal Display Time	t5	1024	1024	1024	clock
Horizontal Blanking Time	t6	140	320	376	clock
Clock Rate	t7	42.6	51.2	72.8	MHz

Timing Diagram of Interface Signal (DE mode)

(1) Vertical input timing
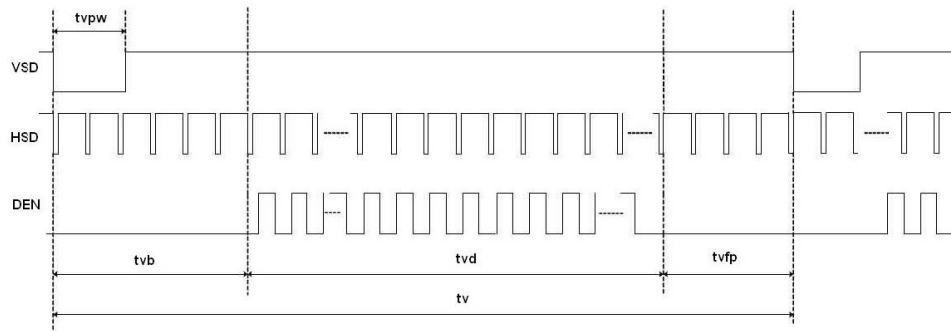
(2) Horizontal Vertical input timing
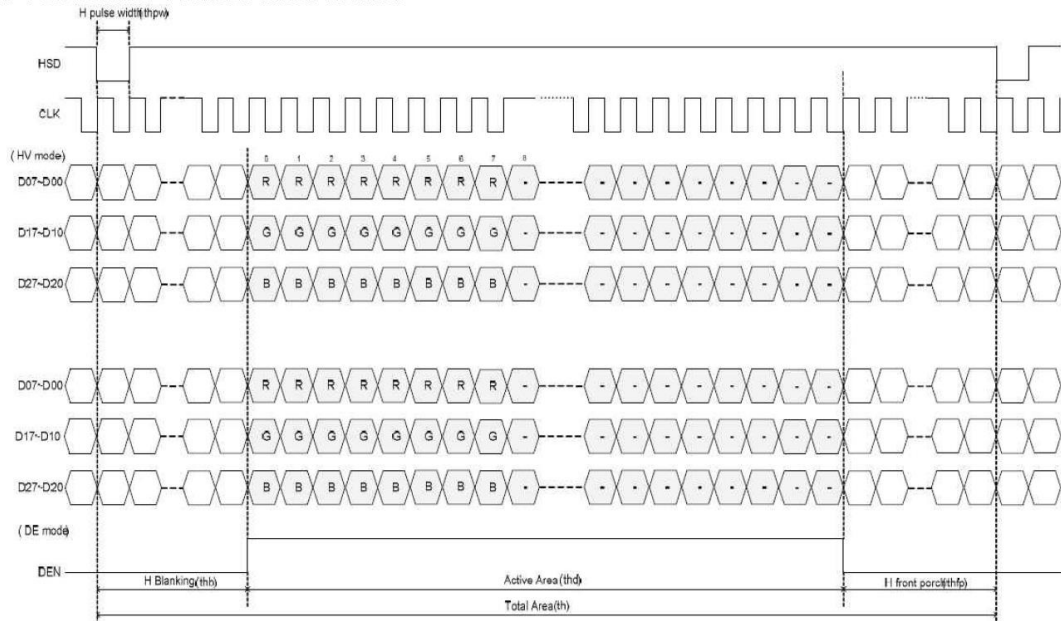
7 Touch Panel Unit
Basic Characteristic

ITEM	SPECIFICATION
Interface Type	Projective Capacitive Multi-Touch Panel
Activation	Two-fingers or Single-finger
X/Y Position Reporting	Absolute Position
Touch Force	No contact pressure required
Calibration	No need for calibration
Report Rate	Approx 80 points/sec
Interface	**I2C**
Control IC	**ILI2511**
Protocol	**V3.X**

7.1 Optical Characteristic

ITEM	SPECIFICATION
Transmittance	80% (min)

7.2 ELECTRICAL CHARACTERISTICS

ITEM	SPECIFICATION
I2C Interface	Power & signal Input 3.3V

7.3 Interface

Pin	Name	Description
1	GND	GND
2	SDA	I2C Data
3	SCL	I2C Clock
4	VDD	Power 3.3V
5	/INT	Interrupt Request pin
6	/RES	Reset touch panel controller, active low

7.4 Power- on Timing Chart
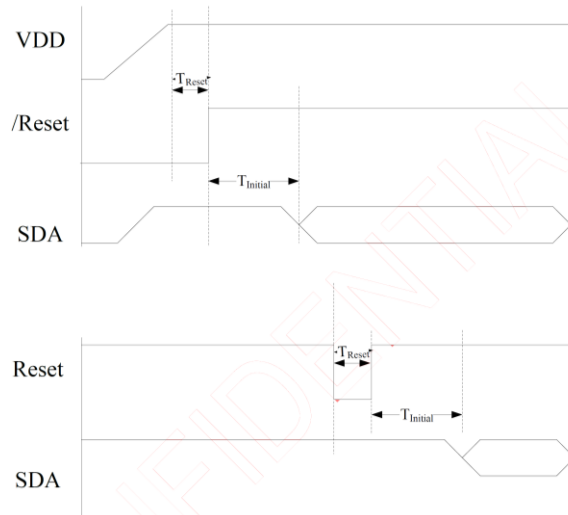
Symbol	Parameter	MIN.	MAX.	Unit
$T_{Initial}$	After powering-on or resetting the device, the device needs I_{nitial} time to configure the system.	-	100	ms
T_{Reset}	/Reset pin low hold time	50	-	μs

7.5 I2C AC Waveform
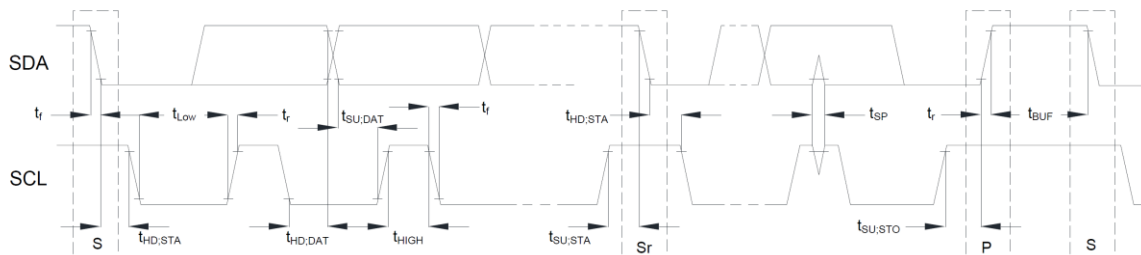
7.6 I2C Characteristics

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

7.7 Device Address

MSB							LSB
1	0	0	0	0	0	1	0/1
Device Address							R/W

7-bit Device Address: 0x41

8-bit Device Read Address:0x83

8-bit Device Write Address:0x82

7.8 Data Transfer

Data is transferred over the I2C bus with 8-bit address and 8-bit data.

1	7	1	1	8	1	1
S	Slave Address	Wr	A	Data Byte	A	P
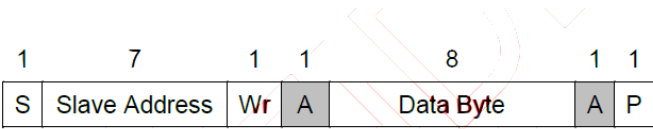
S	Start Condition
Sr	Repeated Start Condition
Rd	Read (bit value of 1)
Wr	Write (bit value of 0)
A/NA	Acknowledge (this bit position may be '0' for an ACK or '1' for a NACK)
P	Stop Condition
	Master-to-Slave
	Slave-to-Master
---	Continue

I2C Write timing

SCL ⎍1⎍2⎍3⎍4⎍5⎍6⎍7⎍8⎍9⎍ ⎍1⎍2⎍3⎍4⎍5⎍6⎍7⎍8⎍ ⎍9⎍

SDA ⟍A6⟋A5⟋A4⟋A3⟋A2⟋A1⟋A0⟋ 0 ⟍ACK⟋ ⟍D7⟋D6⟋D5⟋D4⟋D3⟋D2⟋D1⟋D0⟋ ⟍ACK/NACK⟋
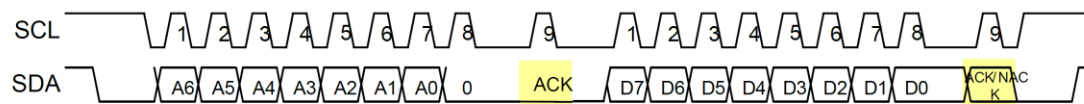
▢ => slave to master

I2C Read timing

SCL ⎍1⎍2⎍3⎍4⎍5⎍6⎍7⎍8⎍ ⎍9⎍ ⎍1⎍2⎍3⎍4⎍5⎍6⎍7⎍8⎍9⎍

SDA ⟍A6⟋A5⟋A4⟋A3⟋A2⟋A1⟋A0⟋ 1 ⟍ACK⟋ ⟍D7⟋D6⟋D5⟋D4⟋D3⟋D2⟋D1⟋D0⟋ ⟍ACK/NACK⟋
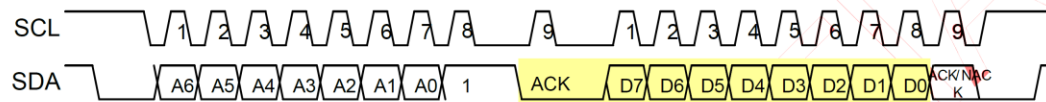
▢ => slave to master

Byte Write

START ... STOP

SCL ⎍1⎍2⎍3⎍4⎍5⎍6⎍7⎍8⎍ ⎍9⎍ ⎍1⎍2⎍3⎍4⎍5⎍6⎍7⎍8⎍ ⎍9⎍ ⎍1⎍2⎍3⎍4⎍5⎍6⎍7⎍8⎍ ⎍9⎍

SDA 1 0 0 0 0 0 1 0 ⟍ACK⟋ ⟍A7⟋A6⟋A5⟋A4⟋A3⟋A2⟋A1⟋A0⟋ ⟍ACK⟋ ⟍D7⟋D6⟋D5⟋D4⟋D3⟋D2⟋D1⟋D0⟋ ⟍ACK⟋
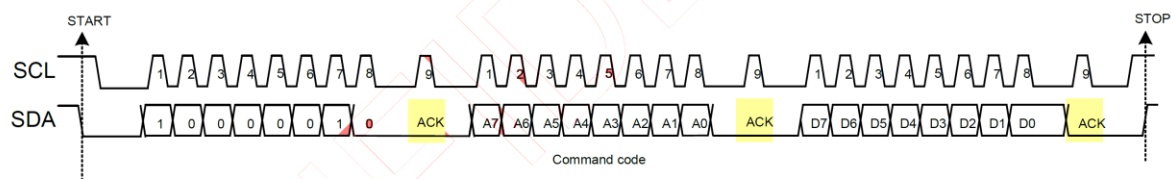
Command code

S	Slave Address	Wr	A	Command Code	A	Data Byte	A	P

Byte Write

Byte Read

c

S	Slave Address	Wr	A	Command Code	A	Sr	Slave Address	Rd	A	Data Byte	A	P

Byte Read

Multi-Byte Write

S	Slave Address	Wr	A	Command Code	A	Data Byte 0	A	Data Byte 1	A

	Data Byte 2	A	-----	A	Data Byte N	A	P

Multi-Byte Write

Multi-Byte Read

S	Slave Address	Wr	A	Command Code	A	Sr	Slave Address	Rd	A	Data Byte 0	A

	Data Byte 1	A	-----	A	Data Byte N	NA	P
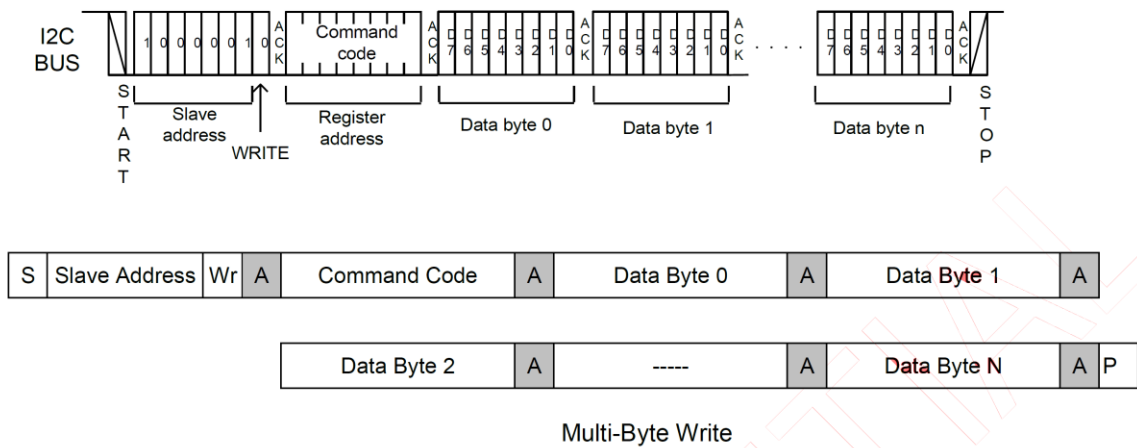
Multi-Byte Read
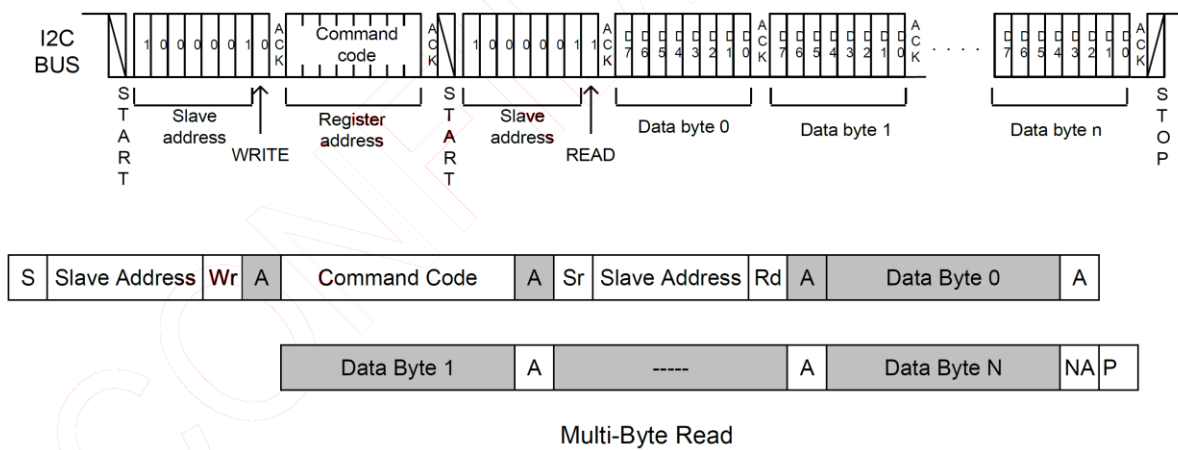
7.9 Format Protocol
Protocol V3.X Command List

CMD Code	Name	Set /Get	Note	b7	b6	b5	b4	b3	b2	b1	b0
0x10	Touch Information	Get		0: No touch							
				1: Last Report at ID 0 to ID 5 (include release status)							
				2: Last Report at ID 6 to ID 9 (include release status)							
			ID0	1: Touch Down, 0: Touch Off	0	X_High direction coordinate					
				X_Low direction coordinate							
				0	0	Y_High direction coordinate					
				Y_Low direction coordinate							
				Touch Pressure							
			ID1	1: Touch Down, 0: Touch Off	0	X_High direction coordinate					
				X_Low direction coordinate							
				0	0	Y_High direction coordinate					
				Y_Low direction coordinate							
				Touch Pressure							
			ID2	1: Touch Down, 0: Touch Off	0	X_High direction coordinate					
				X_Low direction coordinate							
				0	0	Y_High direction coordinate					
				Y_Low direction coordinate							
				Touch Pressure							
			ID3	1: Touch Down, 0: Touch Off	0	X_High direction coordinate					
				X_Low direction coordinate							
				0	0	Y_High direction coordinate					
				Y_Low direction coordinate							
				Touch Pressure							
			ID4	1: Touch Down, 0: Touch Off	0	X_High direction coordinate					
				X_Low direction coordinate							
				0	0	Y_High direction coordinate					
				Y_Low direction coordinate							
				Touch Pressure							

			ID5	1: Touch Down, 0: Touch Off	0	X_High direction coordinate
				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		
0x14	Touch Information 2	Get	ID6	1: Touch Down, 0: Touch Off	0	X_High direction coordinate
				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		
			ID7	1: Touch Down, 0: Touch Off	0	X_High direction coordinate
				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		

			ID8	1: Touch Down, 0: Touch Off	0	X_High direction coordinate
				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		
			ID9	1: Touch Down, 0: Touch Off	0	X_High direction coordinate
				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		
0x20				The maximum X coordinate (bit 7:0)		
				The maximum X coordinate (bit 15:8)		
				The maximum Y coordinate (bit 7:0)		
				The maximum Y coordinate (bit 15:8)		
				The channel numbers of X direction		
				The channel numbers of Y direction		
				The maximum report points		

CMD Code	Name	Set/Get		Note
				The channel numbers of TouchKey / Scrolling Bar
				For Touch Key Application (Maximum supports 31 Touch Key) 　Byte 8 : The Touch Key number (<32) 　Byte 9: 0xFF
0x30	Enter Sleep Mode	Set		--
0x40	Firmware Version	Get		Chip ID Code
				Major firmware version
				Minor firmware version
				Release firmware version
				For Customer Firmware Version
				For Customer Firmware Version
				For Customer Firmware Version
				For Customer Firmware Version
0x42		Get		Major protocol version : 0x03
				Minor protocol version : XX
				Release protocol version : XX

Protocol V3.X Data Format

CMD Code	Name	Set / Get	Note	b7	b6	b5	b4	b3	b2	b1	b0
0x10	Touch Information	Get	Packet Number	0: No touch 1: Last Report at ID 0 to ID 5 (include release status) 2: Last Report at ID 6 to ID 9 (include release status)							
			ID0	1: Touch Down, 0: Touch Off	0	X_High direction coordinate					
				X_Low direction coordinate							
				0	0	Y_High direction coordinate					
				Y_Low direction coordinate							
				Touch Pressure							

			ID1	1: Touch Down, 0: Touch Off	0	X_High direction coordinate
				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		
			ID2	1: Touch Down, 0: Touch Off	0	X_High direction coordinate
				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		
			ID3	1: Touch Down, 0: Touch Off	0	X_High direction coordinate
				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		
			ID4	1: Touch Down, 0: Touch Off	0	X_High direction coordinate

				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		
			ID5	1: Touch Down, 0: Touch Off	0	X_High direction coordinate
				X_Low direction coordinate		
				0	0	Y_High direction coordinate
				Y_Low direction coordinate		
				Touch Pressure		

TP needs to work in environment with stable stray capacitance. In order to minimize the variation in stray capacitance, all conductive mechanical parts must not be floating. Intermittent floating any conductive part around the touch sensor may cause significant stray capacitance change and abnormal touch function. It is recommended to keep all conductive parts having same electrical potential as the GND of the touch controller module.
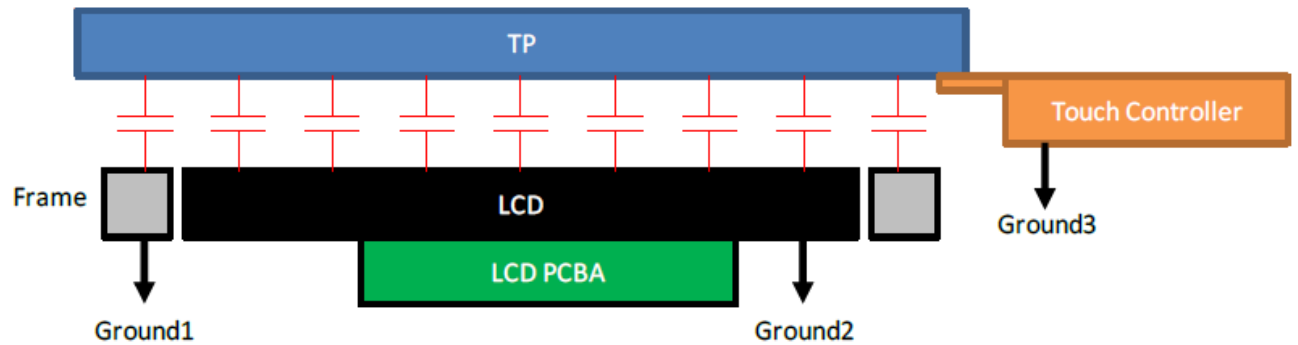
GND1, GND2 and GND3 should be connected together to have the same ground

8. RELIABILITY TEST CONDITIONS

Test Item	Test Conditions	Note
High Temperature Operation	70±3°C ,　t=240 hrs	
Low Temperature Operation	-20±3°C ,　t=240 hrs	
High Temperature Storage	80±3°C ,　t=240 hrs	1,2
Low Temperature Storage	-30±3°C ,　t=240 hrs	1,2
Storage at High Temperature and Humidity	60°C, 90% RH , 240 hrs	1,2
Thermal Shock Test	-20°C (30min) ~ 70°C (30min) 100 cycles	1,2
Vibration Test (Packing)	Sweep frequency : 10 ~ 55 ~ 10 Hz/1min Amplitude : 0.75mm Test direction : X.Y.Z/3 axis Duration : 30min/each axis	2

Note 1 : Condensation of water is not permitted on the module.

Note 2 : The module should be inspected after 1 hour storage in normal conditions (15-35°C , 45-65%RH).

Note 3 : The module shouldn't be tested more than one condition, and all the test conditions are independent.

Note 4 : All the reliability tests should be done without protective film on the module.

9. General Precautions

9-1 Safety

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

9-2 Handling

1. The LCD panel is plate glass. Do not subject the panel to mechanical shock or to excessive force on its surface.

2. The polarizer attached to the display is easily damaged. Please handle it carefully to avoid scratch or other damages.

3. To avoid contamination on the display surface, do not touch the module surface with bare hands.

4. Keep a space so that the LCD panels do not touch other components.

5. Put cover board such as acrylic board on the surface of LCD panel to protect panel from damages.

6. Transparent electrodes may be disconnected if you use the LCD panel under environmental conditions where the condensation of dew occurs.

7. Do not leave module in direct sunlight to avoid malfunction of the ICs.

9-3 Static Electricity

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

9-4 Storage

1. Store the module in a dark room where must keep at +25±10℃ and 65%RH or less.
2. Do not store the module in surroundings containing organic solvent or corrosive gas.
3. Store the module in an anti-electrostatic container or bag.

9-5 Cleaning

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

9-6 Others

1. AMIPRE will provide one year warrantee for all products and three months warrantee for all repairing products.
2. Do not keep the LCD at the same display pattern continually. The residual image will happen and it will damage the LCD. Please use screen saver

9-7 Mechanism

(1) Please mount LCD module by using mounting holes arranged in four corners tightly.

(2) The square adhesive tape which is between the touch panel and display can't provide well supporting in the long term and high ambient temperature condition. Whether upright or horizontal position the support holder which is in the back side of the display is needed. Do not let the display floating.

10. OUTLINE DIMENSION

I2C interface:

1	GND
2	SDA
3	SCL
4	VDD
5	/INT
6	/RES

1	GND	16	GND
2	VDD	17	RXCLKIN−
3	VDD	18	RXCLKIN+
4	V_EDID	19	GND
5	NC	20	NC
6	CLK_EDID	21	NC
7	DATA_EDID	22	GND
8	RXIN0−	23	GND
9	RXIN0+	24	NC
10	GND	25	NC
11	RXIN1−	26	NC
12	RXIN1+	27	NC
13	GND	28	NC
14	RXIN2−	29	NC
15	RXIN2+	30	NC

Note:
1. Unless indicated, Tolerance "±0.3"
2. CN2:P1.0 30Pin/DS100-430-H23 or Equivalent
3. CN1:JST BHSR-02VS-1 or Equivalent

1	1024600H1 LCM	7	
2	1024600L PCB (21102246004)	8	
3	1024600LD-T CTP (17910246020)	9	
4	2810246012 (ILI 2511)	10	
5	I2C interface	11	
6		12	

Dimensions:
- (83.43)
- (8.83)
- 143.0±0.3 (MDL Outline)
- 19.18±0.15
- 128.5±0.3 (Bezel Opening)
- (20.79)
- 125.28 (A,A)
- (10.0)
- (14.69)
- (13.99)
- 13.4±0.15
- (15.04)
- (9.75)
- 0.2088
- 0.0725
- 0.2175
- R G B
- A Block
- (126.4)
- 235.0±0.3 (MDL Outline)
- 226.0±0.3 (Bezel Opening)
- 222.72 (A,A)
- 223.42±0.2 (Cover Lens V,A)
- 224.82±0.2 (T/P A,A)
- 235.0±0.3 (T/P)
- 255.0±0.15 (Cover Lens)
- 200.0±5.0
- 4-R5.0
- (20.43)
- 126.0±0.2 (Cover Lens V,A)
- (19.73)
- 127.4±0.2 (T/P A,A)
- (10.0)
- 145.8±0.3 (T/P)
- 165.8±0.15 (Cover Lens)
- (38.88)
- CN1
- PCB T=0.4mm
- 10.67±0.5
- 7.1±0.5
- 7.05±0.5
- 5.3±0.3 (w/FPC)
- 4.7±0.3 (w/FPC)
- 4.5±0.3 (w/o FPC)
- 10.67±0.5

			A	B
TOLERANCE GRADE(±)		DIM.		
		MM		
		IE NO.		
PART'S NO. LCM 1024600H4-T		DWN. EMILY	CHK.	APPD.
		DATE 01-02-19	DATE	DATE

REV. REVISION RECORD
0 NEW RELEASE

DATE NAME
01-02-19 EMILY

AMPIRE 晶采光電科技

TITLE 1024600H4-T

DWG. NO. *190107MA

SHEET 1 OF 1

I2C interface:

1	GND
2	SDA
3	SCL
4	VDD
5	/INT
6	/RES

1	GND	16	GND
2	VDD	17	RXCLKIN+
3	VDD	18	RXCLKIN-
4	V_EDID	19	GND
5	NC	20	NC
6	CLK_EDID	21	NC
7	DATA_EDID	22	GND
8	RXIN0-	23	GND
9	RXIN0+	24	NC
10	GND	25	NC
11	RXIN1-	26	NC
12	RXIN1+	27	NC
13	GND	28	NC
14	RXIN2-	29	NC
15	RXIN2+	30	NC

Note:
1. Unless indicated, Tolerance "±0.3"
2. CN2:P1.0 30Pin/DS100-430-H23 or Equivalent
3. CN1:JST BHSR-02VS-1 or Equivalent

Back View

A Block

1	1024600H1 LCM	7	
2	1024600L PCB (2110246004)	8	
3	1024600LD-T CTP (1791024620)	9	
4	2810246012 (ILI 2511)	10	
5	I2C interface	11	
6		12	

TOLERANCE GRADE(±)	A	B	DIM.	MM

REV.	REVISION RECORD	DATE	NAME
0	NEW RELEASE	01-02-19	EMILY

IF NO. | PARTS NO. LCM-1 | 1024600H4-T
DWN. EMILY | CHK. | APPD. | DATE
DATE 01-02-19' | DATE

AMPIRE 晶采光電科技
TITLE 1024600H4-T
DWG. NO. *190108MA | SHEET 1 OF 1

Conductive fabric 7.0x15.5mm
Kapton (10.0x70.0mm)
Black print
Kapton (10.0x60.0mm)
Component Area (116.65)
Conductive fabric 27.0x20.0mm
CN2

(83.43)
(8.83)
69.83±1.0
255.0±0.15 (Cover Lens)
235.0±0.3 (MDL Outline)
130.0±0.3 (PCB)
68.85±1.0
(12.8)
(9.75)
128.6±1.0
(9.75)
(10.18)
(8.83)
35.0±1.0
75.0±0.3 (PCB)
143.0±0.3 (MDL Outline)
165.8±0.15 (Cover Lens)
0.2088
0.0725
0.2175
R G B

LED Driver Board

1	+12V
2	LED_EN
3	GND
4	PWM

Note:
1. Unless indicated, Tolerance Grade "B" is adopted.
2. UV Glue For OLB Protection.

IE NO.	DIM.	A	B
TOLERANCE GRADE(±)	~6	0.05	0.1
	6~18	0.08	0.18
	18~50	0.1	0.25
	50~180	0.2	0.4
	180~	0.3	0.5

7	TFT-1024600-11-0
8	
9	
10	
11	
12	

FPH1I-104.TTW000 or equivalent
JST:SM02B-BHSS-1-TB or equivalent

CN2
CN1

18.65±0.3 P2.0x3
9.6±0.1
10.6±0.1
7.6±0.2
9.7±0.1
2-Ø3.0
52.75±0.3
54.4±0.1
65.0±0.2
10.5±0.2
[3.1] 7.5±0.2
20.1±0.1
30.0±0.2
7.2±0.3
4.8±0.3
1.6

PARTS NO.LCM-2	DWN.	CHK.	APPD.	DATE
1024600B2	EMILY			
		DATE 12-23-10'	DATE	DATE

AMPIRE 晶采光電科技

TITLE	適用品號
1024600B2	

No.	
2	
1	AM-1024600B2TMQW-01H

DWG. NO. *101272MA

SHEET 1 OF 1

(10.1") [2