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-12801024A1TMQW-30H |
| APPROVED BY | |
| DATE | |

☑ Approved For Specifications
☐ Approved For Specifications & Sample

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| APPROVED BY | CHECKED BY | ORGANIZED BY |
|---|---|---|
| | | |

# RECORD OF REVISION

| Revision Date | Page | Contents | Editor |
|---|---|---|---|
| 2015/11/06 | - | New Release | Simon |

## 1. Features

The TFT is 17.0” color TFT-LCD (Thin Film Transistor Liquid Crystal Display) module composed of LCD panel, driver ICs, control circuit and backlight. By applying 8 bit digital data(6Bit+HFRC),1280×RGBX3 X1024, 16.7M-color images are displayed on the 17.0” diagonal screen..

## 2. PHYSICAL SPECIFICATIONS

| Item | Specifications | Remark |
|---|---|---|
| LCD size | 17.0 inch(Diagonal) | |
| Number of Pixels | 1280(H) × 1024(V) | |
| Display mode | Normally white, TN | |
| Number of Colors | 16.7M (6Bit+HFRC) | |
| Dot pitch | 0.264(W) × 0.264(H) | |
| Active area | 337.92(W) × 270.336(H) | |
| Module size | 358.5 × 296.5 × 9.1 (typ) | |
| Surface treatment | Anti-Glare, 3H | |
| Viewing Angle | 160 /140(Typ.) | |
| Backlight | White LED | |
| Color arrangement | RGB vertical strip | |

## 3. ABSOLUTE MAXIMUM RATINGS

| ITEM | SYMBOL | VALUES | | UNIT | REMARK |
|---|---|---|---|---|---|
| | | MIN | MAX | | |
| Power Voltage | $V_{DD}$ | -0.3 | 7.0 | V | VSS=0V, TA=25℃ |
| | $V_{LED}$ | -0.3 | 15 | V | |
| Operation Temperature | $T_{op}$ | -20 | 70 | ℃ | |
| Storage Temperature | $T_{st}$ | -30 | 80 | ℃ | |

Note 1: 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.

# 4. ELECTRICAL CHARACTERISTICS

## 4-1 Typical Operation Conditions

| ITEM | | SYMBOL | MIN | TYP | MAX | UNIT | NOTE |
|---|---|---|---|---|---|---|---|
| LCD Power Voltage | | VCC | 4.5 | 5.0 | 5.5 | V | |
| LCD Power Current | | ICC | - | 290 | 500 | mA | *1) |
| LCD Rush Current | | VCC_Irush | | | 3 | A | *3) |
| Logic Input Voltage (LVDS: IN+,IN-) | Common Voltage | VCM | $\frac{\lvert VID \rvert}{2}$ | - | 2.4-$\frac{\lvert VID \rvert}{2}$ | V | Logic Input Voltage (LVDS: +,IN-) |
| | Differential Input Voltage | $\lvert VID \rvert$ | 200 | - | 600 | mV | |
| | Threshold Voltage (HIGH) | VTH | - | - | 100 | mV | |
| | Threshold Voltage (LOW) | VTL | -100 | - | - | mV | |
| Logic Input Voltage | VIH | 0.7*DVDD | - | DVDD | V | | Logic Input Voltage |
| | VIL | GND | - | 0.3*DVDD | V | | |
| LED Driver Power Voltage | | VLED | -- | 12 | -- | V | |
| LED Driver Power Current | | $I_{LED}$ (VLED=12V) | -- | 2.1 | -- | A | Ta=25℃ |
| ADJ frequency | | $f_{PWM}$ | 100 | -- | 1k | Hz | |
| ADJ logic level High | | VIH | 2.0 | -- | -- | V | |
| ADJ logic level High | | VIL | -- | -- | 0.8 | V | |

【Note】

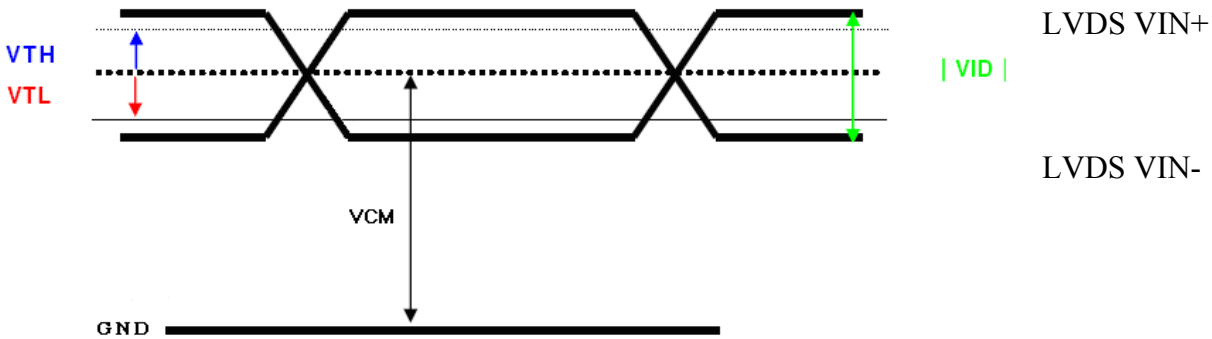
*1)TYP. specification：Gray-level test Pattern (TYP Freq. @5.0V)

MAX. specification：Black test Pattern (TYP Freq. @5.0V)

Gray-level Pattern

Black Pattern

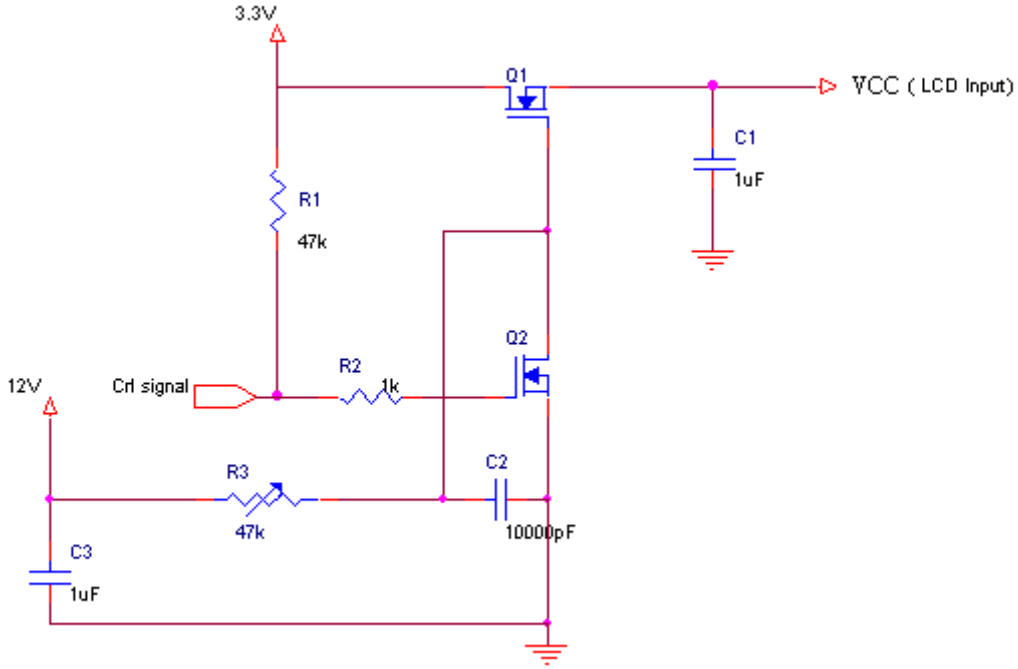
*2) LVDS Signal Definite：

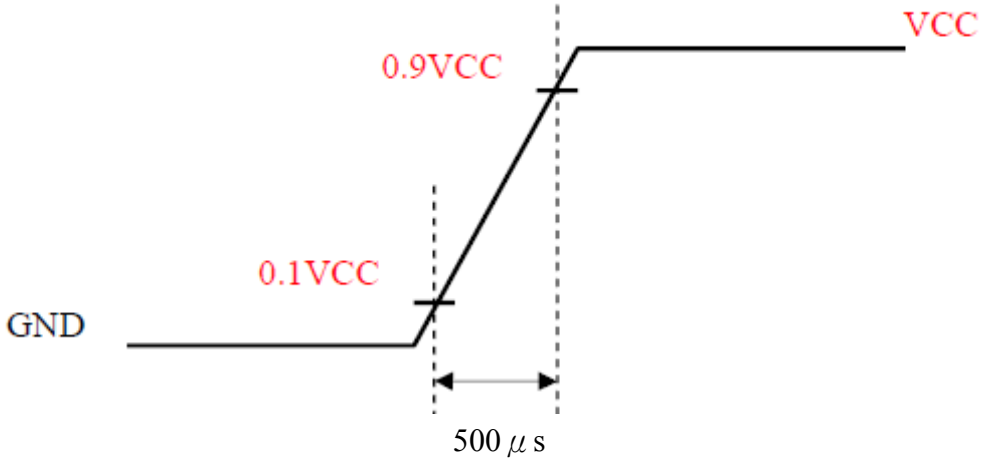



VIN+：Positive differential DATA & CLK Input

VIN-：Negative differential DATA & CLK Input

*3) Irush measure condition



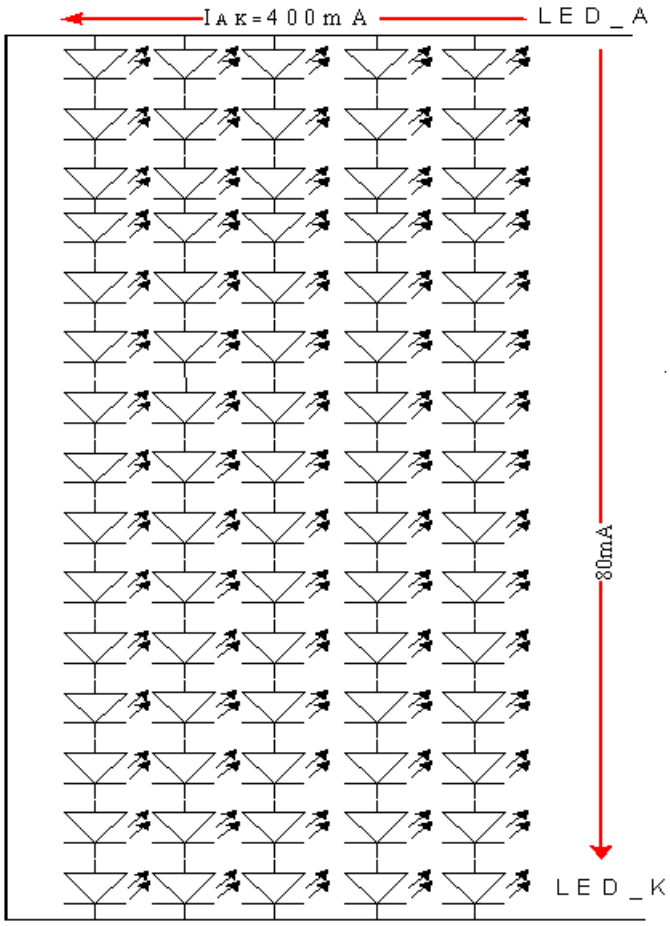



## 4-2 LED Driving Conditions

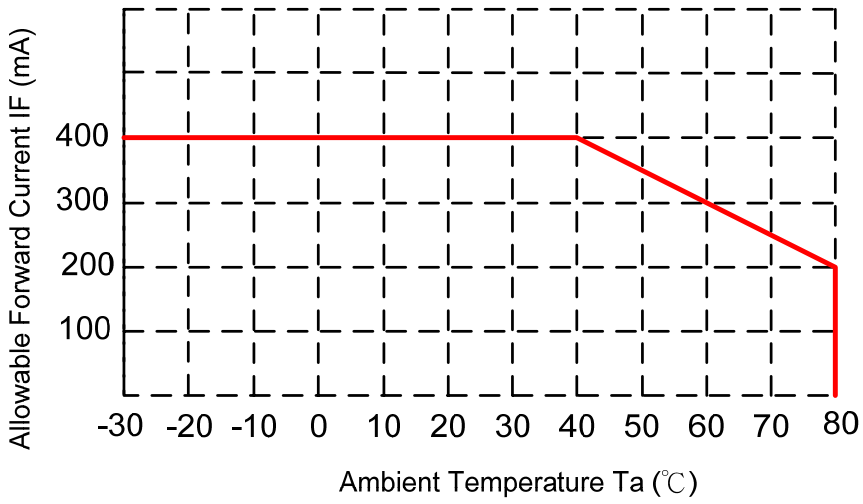
| ITEM | SYMBOL | MIN | TYP | MAX | UNIT | CONDITION |
|---|---|---|---|---|---|---|
| LED Backlight Voltage | $V_{BL}$ | -- | 52 | 55 | V | $I_{BL}$=400mA |
| LED Backlight Current | $I_{BL}$ | - | 400 | -- | mA | **Ta=25℃** |
| LED DICE Life Time | | -- | 40K | - | kHr | Note* |

Note* : Brightness to be decreased to 50% of the initial value.

**Ta=25℃**




When LCM is operated over 40℃ ambient temperature, the ILED should be follow :



## 4-3 Power Sequence

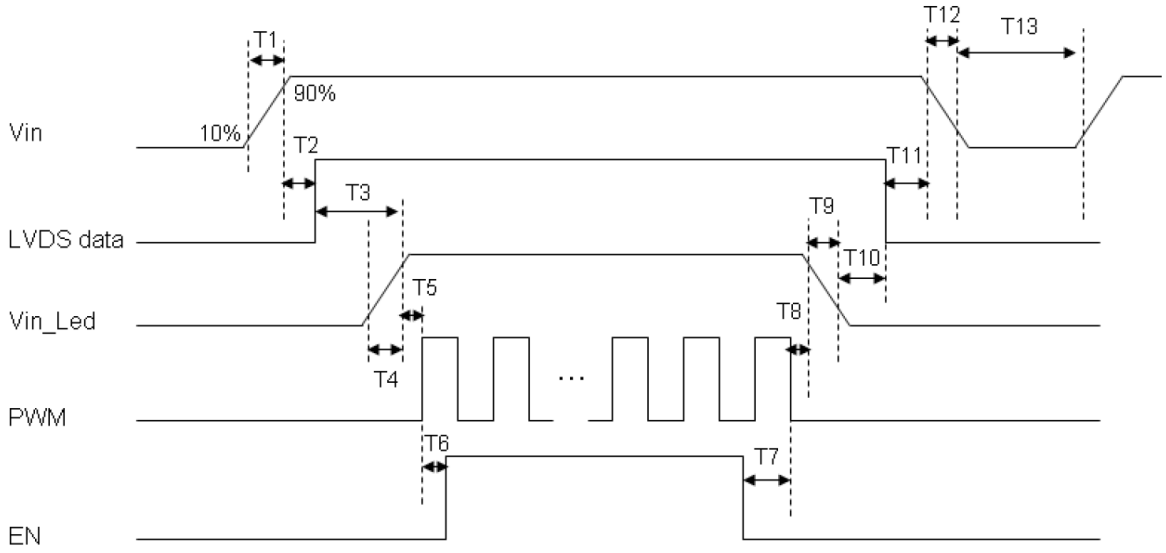



**Table 10 Power Sequencing Requirements**

| Parameter | Symbol | Unit | Min | Typ. | Max |
|---|---|---|---|---|---|
| VIN Rise Time | T1 | ms | 0.5 | -- | 10 |
| VIN Good to Signal Valid | T2 | ms | 30 | -- | 90 |
| Signal Valid to Backlight On | T3 | ms | 200 | -- | -- |
| Backlight Power On Time | T4 | ms | 0.5 | -- | -- |
| Backlight VDD Good to System PWM On | T5 | ms | 10 | -- | -- |
| System PWM ON to Backlight Enable ON | T6 | ms | 10 | -- | -- |
| Backlight Enable Off to System PWM Off | T7 | ms | 0 | -- | -- |
| System PWM Off to B/L Power Disable | T8 | ms | 10 | -- | -- |
| Backlight Power Off Time | T9 | ms | -- | 10 | 30 |
| Backlight Off to Signal Disable | T10 | ms | 200 | -- | -- |
| Signal Disable to Power Down | T11 | ms | 0 | -- | 50 |
| VIN Fall Time | T12 | ms | -- | 10 | 30 |
| Power Off | T13 | ms | 500 | -- | -- |

## 5. INTERFACE PIN CONNECTION

### 5.1 LCD INTERFACE

Used connector: 093G30-B2001A-M4(STARCONN) or equivalent

| PIN NO. | SYMOBL | FUNCTION |
|---|---|---|
| 1 | RXO0- | minus signal of odd channel 0(LVDS) |
| 2 | RXO0+ | plus signal of odd channel 0(LVDS) |
| 3 | RXO1- | minus signal of odd channel 1(LVDS) |
| 4 | RXO1+ | plus signal of odd channel 1(LVDS) |
| 5 | RXO2- | minus signal of odd channel 2(LVDS) |
| 6 | RXO2+ | plus signal of odd channel 2(LVDS) |
| 7 | GND | ground |
| 8 | RXOC- | minus signal of odd clock channel (LVDS) |
| 9 | RXOC+ | plus signal of odd clock channel (LVDS) |
| 10 | RXO3- | minus signal of odd channel 3(LVDS) |
| 11 | RXO3+ | plus signal of odd channel 3(LVDS) |
| 12 | RXE0- | minus signal of even channel 0(LVDS) |
| 13 | RXE0+ | plus signal of even channel 0(LVDS) |
| 14 | GND | ground |
| 15 | RXE1- | minus signal of even channel 1(LVDS) |
| 16 | RXE1+ | plus signal of even channel 1(LVDS) |
| 17 | GND | ground |
| 18 | RXE2- | minus signal of even channel 2(LVDS) |
| 19 | RXE2+ | plus signal of even channel 2(LVDS) |
| 20 | RXEC- | minus signal of even clock channel (LVDS) |
| 21 | RXEC+ | plus signal of even clock channel (LVDS) |
| 22 | RXE3- | minus signal of even channel 3(LVDS) |
| 23 | RXE3+ | plus signal of even channel 3(LVDS) |
| 24 | GND | ground |
| 25 | GND | ground |
| 26 | GND | ground |
| 27 | GND | ground |
| 28 | VCC | Power supply input voltage(5.0 V) |
| 29 | VCC | Power supply input voltage(5.0 V) |
| 30 | VCC | Power supply input voltage(5.0 V) |

1) Please keep the NC Pin and don't connect it to GND or other signals.

2) GND Pin must connect to the ground, don't let it be a vacant pin.

### 5.2 LED DRIVER BOARD INTERFACE

CN2: JST SM04B-SRSS-TB (LF) (SN)

| Pin No. | Symbol | I/O | Description | Note |
|---|---|---|---|---|
| 1 | VLED | P | Voltage for LED circuit | |
| 2 | LED_EN | I | LED BLU ON/OFF.<br>High level: ON; Low level: OFF. | |
| 3 | GND | I | Power ground | |
| 4 | ADJ | P | Adjust the LED brightness by PWM | |

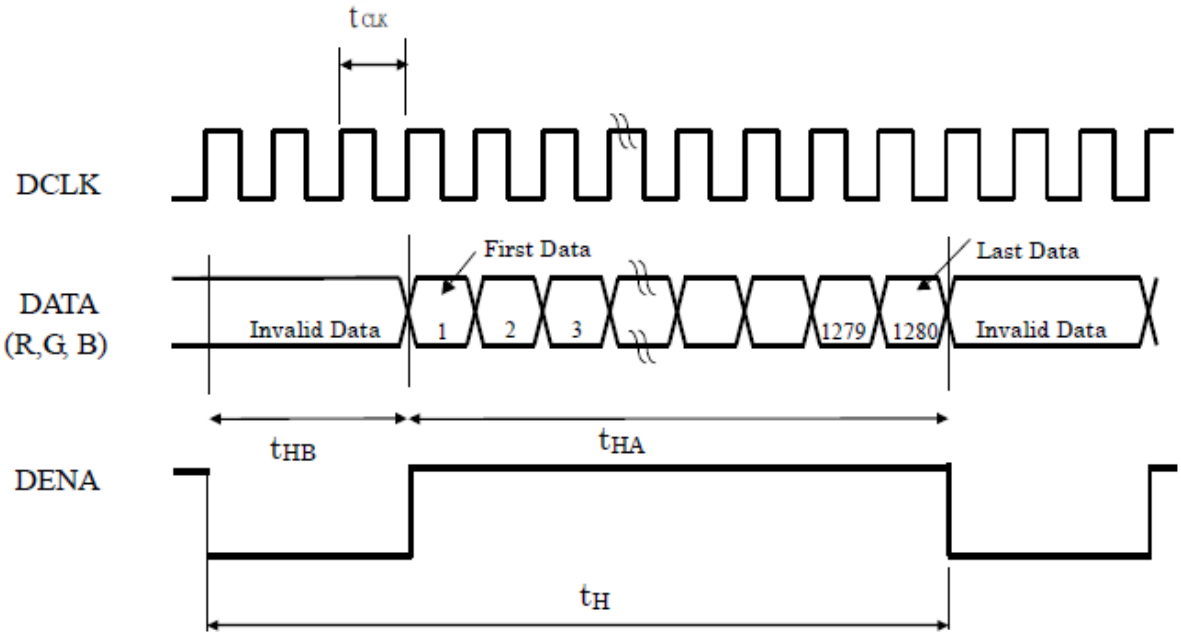
## 6. INTERFACE TIMING

(1) Timing Specifications

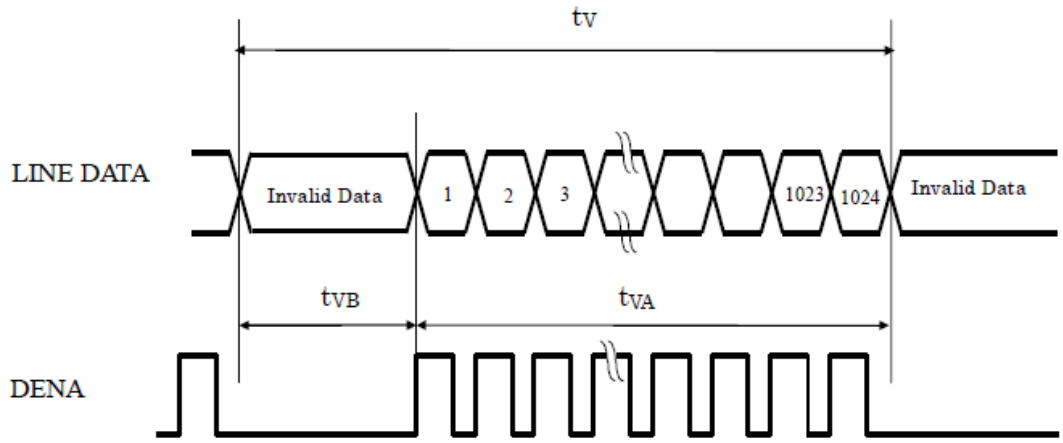
| ITEM | | | SYMBOL | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| LCD Timing | DCLK | Frequency | $f_{CLK}$ | 44 | 54 | 67.5 | MHz |
| | | Period | $t_{CLK}$ | 14.81 | 18.52 | 22.2 | ns |
| | DATA Enable DENA | Horizontal Active | tHA | | 640 | | tCLK |
| | | Horizontal Blank | tHB | 140 | 204 | - | tCLK |
| | | Horizontal Total Time | tH | 780 | 844 | 2047 | tCLK |
| | | Vertical Active Time | tVA | | 1024 | | tH |
| | | Vertical Blank Time | tVB | 8 | 42 | 126 | tH |
| | | Vertical Total Time | tV | 1032 | 1066 | 1150 | tH |
| | | Vertical Frame Rate | Fr | 50 | 60 | 75 | Hz |

(2) Timing Chart

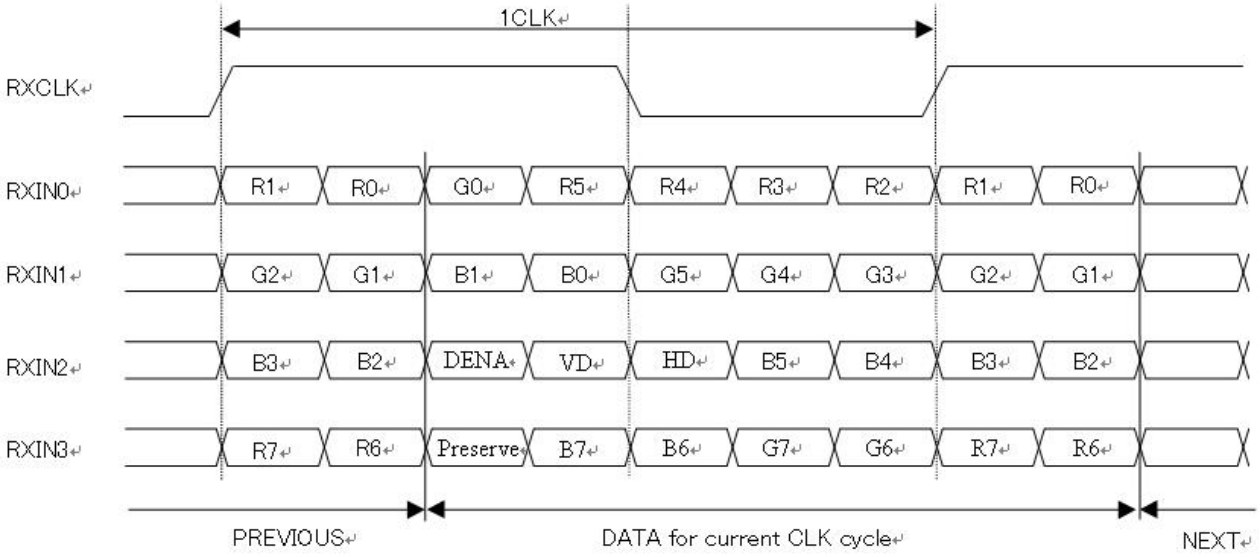
a. Horizontal Timing



b. Vertical Timing




(3) LVDS DATA (VESA)：Timing Chart



(4) Color Data Assignment

| COLOR | INPUT DATA | R DATA | | | | | | | | G DATA | | | | | | | | B DATA | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | R7 | R6 | R5 | R4 | R3 | R2 | R1 | R0 | G7 | G6 | G5 | G4 | G3 | G2 | G1 | G0 | B7 | B6 | B5 | B4 | B3 | B2 | B1 | B0 |
| | | MSB | | | | | | | LSB | MSB | | | | | | | LSB | MSB | | | | | | | LSB |
| BASIC COLOR | BLACK | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | RED(255) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GREEN(255) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | BLUE(255) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | CYAN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | MAGENTA | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | YELLOW | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 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 | 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 | 0 | 0 | 0 | 0 | 0 | 0 |
| | RED(1) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | RED(2) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RED(254) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | RED(255) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GREEN(1) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GREEN(2) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GREEN(254) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GREEN(255) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 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 | 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 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | BLUE(254) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | BLUE(255) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

[Note]

1) Definition of gray scale:

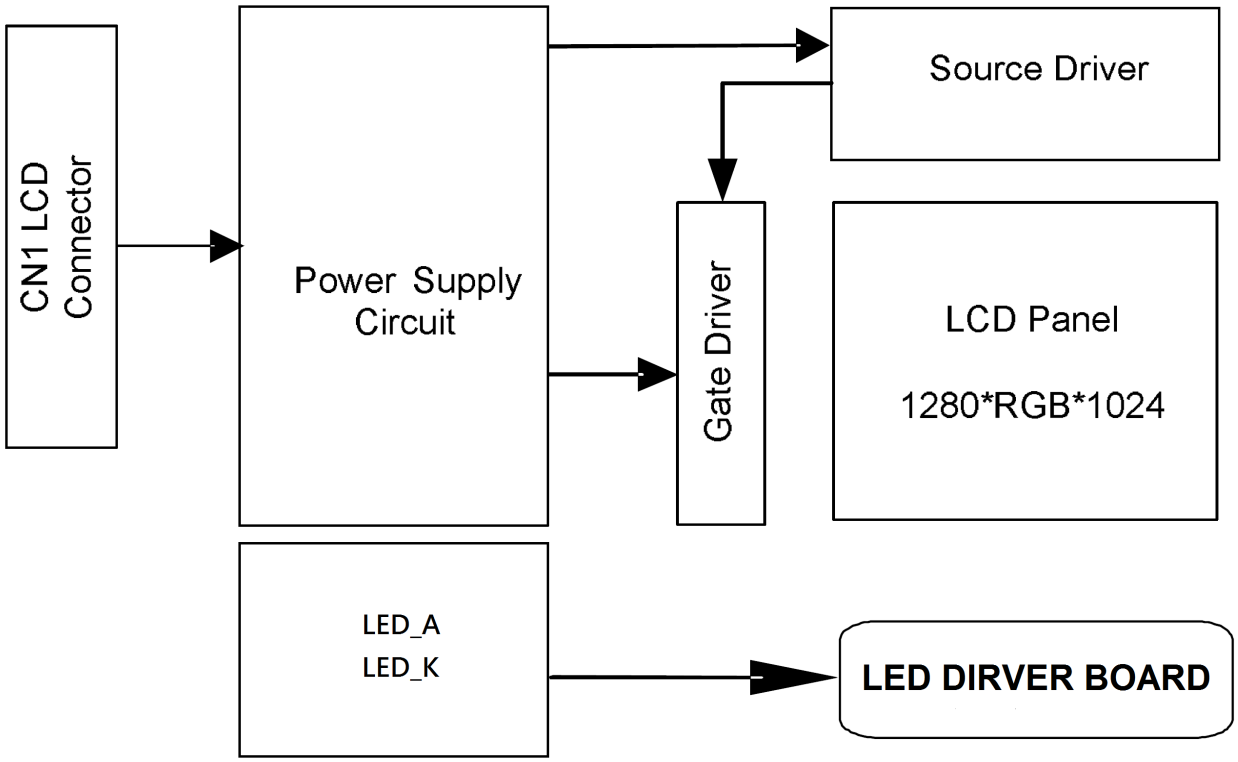
Color (n): n indicates gray scale level; higher n means brighter level.

2) Data: 1-High, 0-Low.

3) This assignment is applied to both odd and even data.

## 7. BLOCK DIAGRAM

TFT- LCD Module



## 8. OPTICAL CHARACTERISTICS

Ta=25℃，VCC=3.3

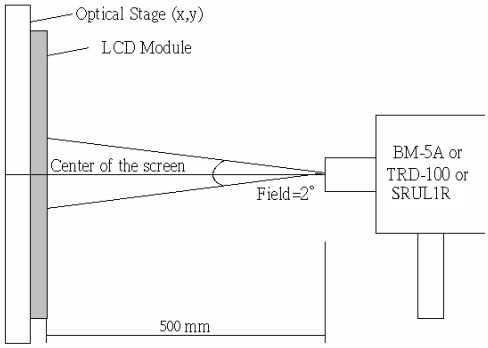
| ITEM | | | SYMBOL | CONDITION | min | typ | max | UNIT | REMARK |
|---|---|---|---|---|---|---|---|---|---|
| Contrast Ratio | | | CR | θ = ψ = 0° | -- | 700 | -- | -- | *1) 2) |
| Luminance(CEN) | | | L | θ = ψ = 0° | 800 | 1000 | -- | cd/m$^2$ | *1) 3) |
| 9P Uniformity | | | ΔL | θ = ψ = 0° | 75 | 80 | -- | % | *1) 3) |
| Response Time | | | Tr | θ = ψ = 0° | -- | 10 | 15 | ms | *5) |
| | | | Tf | θ = ψ = 0° | -- | 15 | 25 | | |
| Crosstalk | | | CT | θ = ψ = 0° | -- | -- | -- | % | *6) |
| Viewing Angle | Horizontal | | ψ | CR≧10 | -70~70 | -80~80 | -- | Deg. | *4) |
| | Vertical | | θ | | -60~60 | -70~70 | -- | | |
| Color Coordinates | | White | X<br>Y | θ = ψ = 0° | (0.263)<br>(0.279) | (0.313)<br>(0.329) | (0.363)<br>(0.379) | | *3) |
| | | Red | X<br>Y | | TBD | TBD | TBD | | |
| | | Green | X<br>Y | | TBD | TBD | TBD | | |
| | | Blue | X<br>Y | | TBD | TBD | TBD | | |
| Gamut | | | CG | θ = ψ = 0° | 67 | 72 | -- | -- | -- |
| Gamma | | | γ | VESA | 2 | 2.2 | 2.4 | -- | *7) |

[Note]

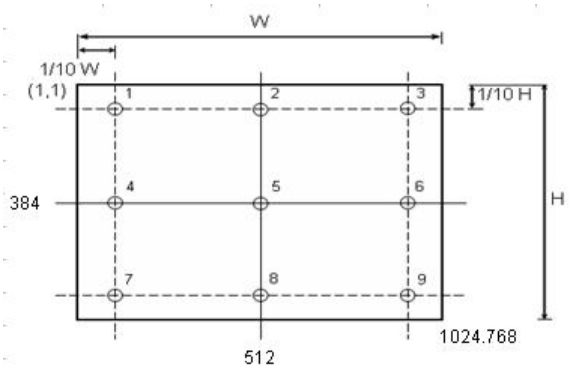
Definition of these measurement items is as follows:

1) Setup of Measurement Equipment

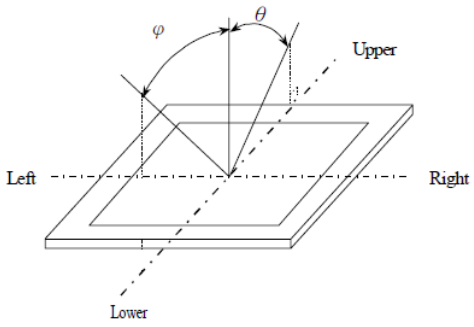
The LCD module should be turn-on to a stable luminance level to be reached. The measurement should be executed after lighting Backlight for 20 minutes and in a dark room.



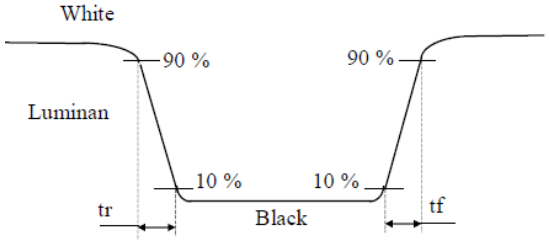

2).Definition of Contrast Ratio:
CR=ON (White) Luminance/OFF (Black) Luminance
3).Definition of Luminance and Luminance uniformity:
Center Luminance, &Color coordinate: measuring the luminance of the point no. 5
Average Luminance: measuring average luminance of points no.1-no.9
Uniformity: Δ L= [L (Min)/L (Max)] ×100 %



4).Definition of Viewing Angle (θ ,ψ ):




5) Definition of Response Time:

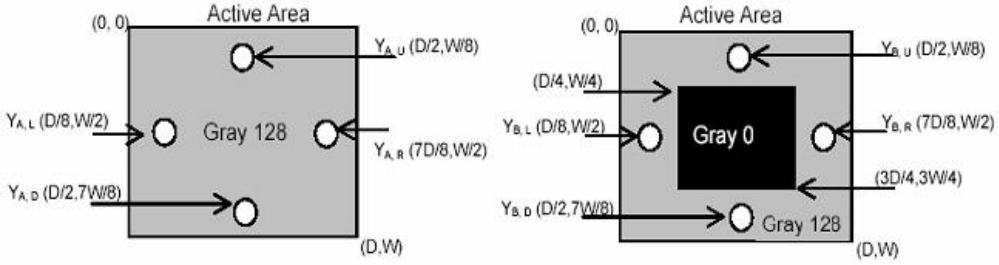



6) Definition of crosstalk:

CT= | $Y_B$-$Y_A$ | /$Y_A$ X 100 (%)

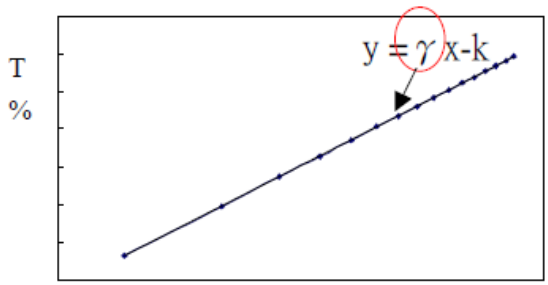
$Y_A$ : The luminance of measured position at pattern A

$Y_B$ : The luminance of measured position at pattern B with Gray level 0




Pattern A Pattern B

7) Definition of Gamma (γ ), follow VESA standard sampling every 16 gray level (0,16,32,…..224,240,255)




Gray level (LOG)

## 9. RELIABILITY TEST CONDITIONS

(1) Temperature and Humidity

| TEST ITEMS | CONDITIONS | REMARK |
|---|---|---|
| High Temperature<br>High Humidity Storage | 60℃; 90%RH; 240hrs<br>(No condensation) | |
| High Temperature Operation | 70℃; 240hrs | |
| High Temperature Storage | 80℃; 240hrs | |
| Low Temperature Operation | -20℃; 240hrs | |
| Low Temperature Storage | -30℃; 240hrs | |
| Thermal Shock | Between -30℃(1hr) ~ 80℃(1hr);<br>100 Cycles | |
| Image Sticking | 25 ℃± 2 ℃ ; 4hrs | Note 1 |
| MTBF | Life assurance 20,000hrs | |

[Note]

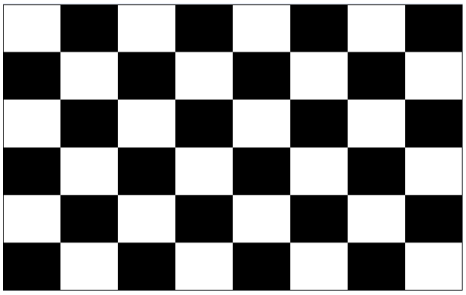
Definition of these measurement items is as follows:

1) Image Sticking :

Condition of image sticking test: 25℃

Operation with test pattern sustained for 4hrs, then change to gray pattern immediately.

After 5 min, the Mura must be disappeared completely.



(a) Test Pattern(Chess Board Pattern)

(b) judgment Pattern(Mid-Gray Pattern)

# 10. GENERAL PRECAUTION

## 10.1 Use Restriction

This product is not authorized for use in life supporting systems, aircraft navigation control systems, military systems and any other application where performance failure could be life-threatening or otherwise catastrophic.

## 10.2 Disassembling or Modification

Do not disassemble or modify the module. It may damage sensitive parts inside LCD module, and may cause scratches or dust on the display. AMPIRE does not warrant the module, if customers disassemble or modify the module.

## 10.3 Breakage of LCD Panel

(1) If LCD panel is broken and liquid crystal spills out, do not ingest or inhale liquid crystal, and do not contact liquid crystal with skin.
(2) If liquid crystal contacts mouth or eyes, rinse out with water immediately.
(3) If liquid crystal contacts skin or cloths, wash it off immediately with alcohol and rinse thoroughly with water.
(4) Handle carefully with chips of glass that may cause injury, when the glass is broken.

## 10.4 Electric Shock

(1) Disconnect power supply before handling LCD module.
(2) Do not pull or fold the LED cable.
(3) Do not touch the parts inside LCD modules and the fluorescent LED's connector or cables in order to prevent electric shock.

## 10.5 Absolute Maximum Ratings and Power Protection Circuit

(1) Do not exceed the absolute maximum rating values, such as the supply voltage variation, input voltage variation, variation in parts' parameters, environmental temperature, etc., otherwise LCD module may be damaged.
(2) Please do not leave LCD module in the environment of high humidity and high temperature for a long time.
(3) It's recommended to employ protection circuit for power supply.

### 10.6 Operation

(1) Do not touch, push or rub the polarizer with anything harder than HB pencil lead.
(2) Use fingerstalls of soft gloves in order to keep clean display quality, when persons handle the LCD module for incoming inspection or assembly.
(3) When the surface is dusty, please wipe gently with absorbent cotton or other soft material.
(4) Wipe off saliva or water drops as soon as possible. If saliva or water drops contact with polarizer for a long time, they may cause deformation or color fading.
(5) When cleaning the adhesives, please use absorbent cotton wetted with a little petroleum benzene or other adequate solvent.

### 10.7 Mechanism

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

### 10.8 Static Electricity

(1) Protection film must remove very slowly from the surface of LCD module to prevent from electrostatic occurrence.
(2) Because LCD modules use CMOS-IC on circuit board and TFT-LCD panel, it is very weak to electrostatic discharge. Please be careful with electrostatic discharge. Persons who handle the module should be grounded through adequate methods.

### 10.9 Strong Light Exposure

The module shall not be exposed under strong light such as direct sunlight. Otherwise, display characteristics may be changed.

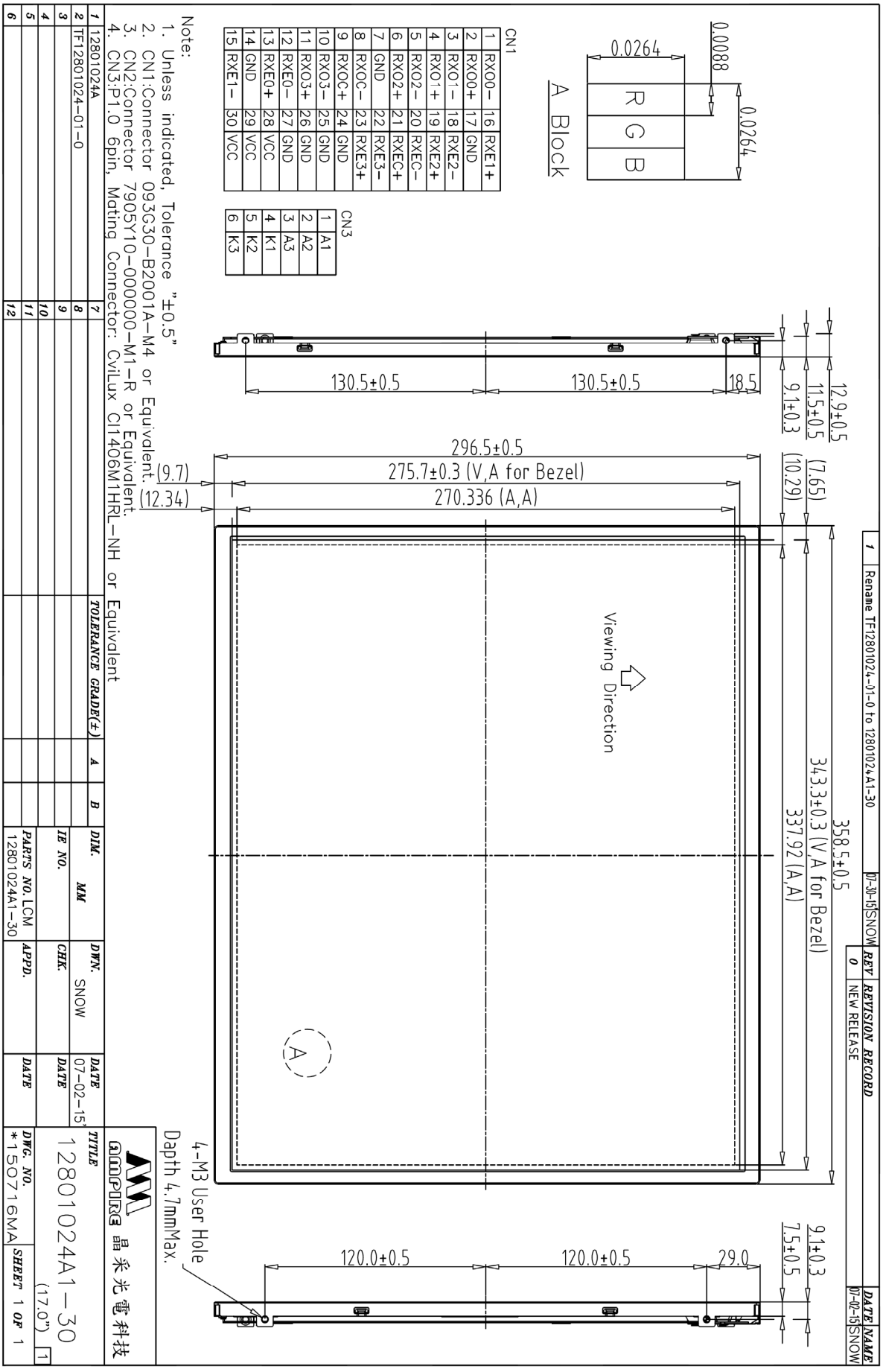
### 10.10 Disposal

When disposing LCD module, obey the local environmental regulations.

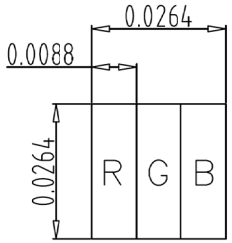
### 10.11 Others

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.

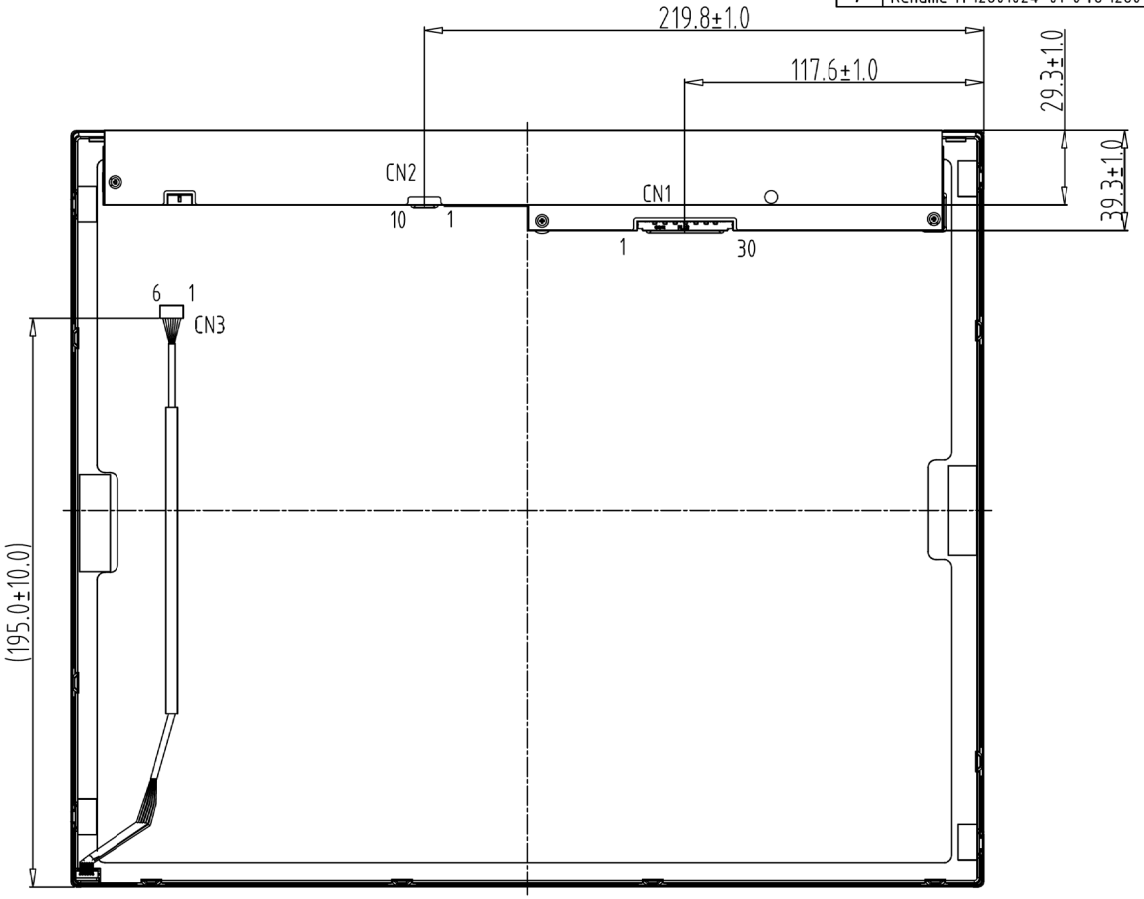
## 11. OUTLINE DIMENSION



| REV | REVISION RECORD | DATE | NAME |
|---|---|---|---|
| 0 | NEW RELEASE | 07-02-15 | SNOW |
| 1 | Rename TF12801024-01-0 to 12801024A1-30 | 07-30-15 | SNOW |




A Block




Back view

CN1

| | | | |
|---|---|---|---|
| 1 | RXO0− | 16 | RXE1+ |
| 2 | RXO0+ | 17 | GND |
| 3 | RXO1− | 18 | RXE2− |
| 4 | RXO1+ | 19 | RXE2+ |
| 5 | RXO2− | 20 | RXEC− |
| 6 | RXO2+ | 21 | RXEC+ |
| 7 | GND | 22 | RXE3− |
| 8 | RXOC− | 23 | RXE3+ |
| 9 | RXOC+ | 24 | GND |
| 10 | RXO3− | 25 | GND |
| 11 | RXO3+ | 26 | GND |
| 12 | RXE0− | 27 | GND |
| 13 | RXE0+ | 28 | VCC |
| 14 | GND | 29 | VCC |
| 15 | RXE1− | 30 | VCC |

CN3

| | |
|---|---|
| 1 | A1 |
| 2 | A2 |
| 3 | A3 |
| 4 | K1 |
| 5 | K2 |
| 6 | K3 |

Note:
1. Unless indicated, Tolerance "±0.5"
2. CN1:Connector 093G30-B2001A-M4 or Equivalent.
3. CN2:Connector 7905Y10-000000-M1-R or Equivalent.
4. CN3:P1.0 6pin, Mating Connector: CviLux CI1406M1HRL-NH or Equivalent

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 12801024A | 7 | | TOLERANCE GRADE(±) | A | B |
| 2 | TF12801024-01-0 | 8 | | | | |
| 3 | | 9 | | | | |
| 4 | | 10 | | | | |
| 5 | | 11 | | | | |
| 6 | | 12 | | | | |

| | | |
|---|---|---|
| DIM. MM | DWN. SNOW | DATE 07-02-15' |
| IE NO. | CHK. | DATE |
| PARTS NO. LCM-1 12801024A1-30 | APPD. | DATE |

AMPIRE 晶采光電科技

TITLE: 12801024A1-30 (17.0") 1

DWG. NO. *150717MA

SHEET 1 OF 1

Date : 2015/11/06 AMPIRE CO., LTD. 21

| REV | REVISION RECORD | DATE | NAME |
|---|---|---|---|
| 0 | NEW RELEASE | 09-25-15' | SNOW |
| 1 | Rename TF12801024-02-0 to 12801024A | 10-08-15 | SNOW |

CN6

| | |
|---|---|
| 1 | A |
| 2 | K |

CN5

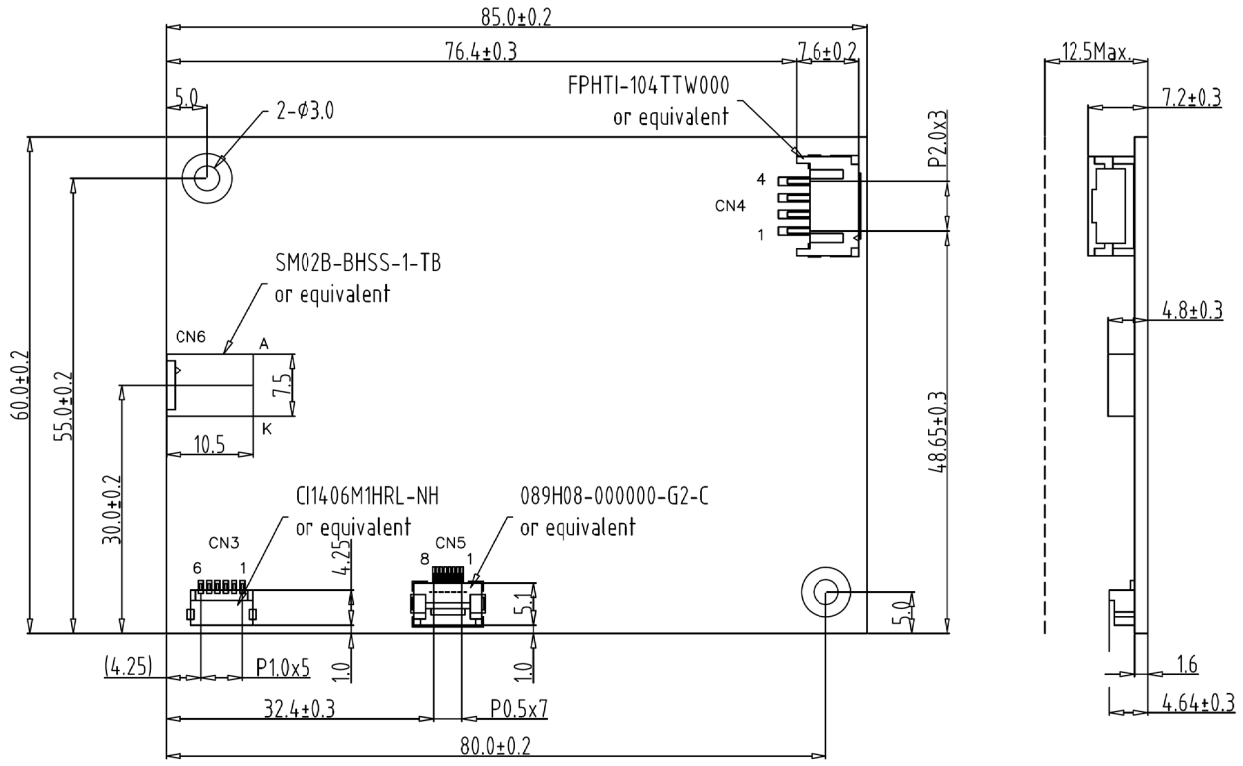
| | |
|---|---|
| 1 | A1 |
| 2 | A2 |
| 3 | A3 |
| 4 | NC |
| 5 | NC |
| 6 | K1 |
| 7 | K2 |
| 8 | K3 |

CN3

| | |
|---|---|
| 1 | A1 |
| 2 | A2 |
| 3 | A3 |
| 4 | K1 |
| 5 | K2 |
| 6 | K3 |

CN4

| | |
|---|---|
| 1 | VIN |
| 2 | LED_EN |
| 3 | GND |
| 4 | PWM |




Note:

1. Unless indicated, Tolerance Grade "±0.3" is adopted.
2. UV Glue For OLB Protection.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TF12801024-02-0 | 7 | | TOLERANCE GRADE(±) | A | B | DIM. MM | DWN. SNOW | DATE 09-25-15' | TITLE 12801024A (17.0" & 19.0") |
| 2 | | 8 | | | | | | | | |
| 3 | | 9 | | | | | IE NO. 2812801001 | CHK. | DATE | |
| 4 | | 10 | | | | | | | | |
| 5 | | 11 | | | | | PARTS NO. LCM 12801024A | APPD. | DATE | DWG. NO. *150992MA |
| 6 | | 12 | | | | | | | | SHEET 1 OF 1 |

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Date : 2015/11/06 AMPIRE CO., LTD. 22