☐ Tentative Specification
☐ Preliminary Specification
■ Approval Specification

MODEL NO.: V215H1
SUFFIX: PE1

Customer:

APPROVED BY **SIGNATURE**

Name / Title _____ _____

Note

Please return 1 copy for your confirmation with your signature and comments.

Approved By	Checked By	Prepared By
Chao-Chun Chung	Roger Huang	Vita Wu

CONTENTS

REVISION HISTORY

Version	Date	Page(New)	Section	Description
Ver 3.0	Oct. 07, 10′	All	All	V215H1-PE1 Approval Specifications was first issued.
Ver 3.1	Dec. 07, 10′	Page 5	1.2	Modify pixel pitch.

1. GENERAL DESCRIPTION

1.1 OVERVIEW

V215H1-PE1 is a 21.5″ TFT Liquid Crystal Display product with driver ICs and 2ch-LVDS interface. This product supports 1920 x 1080 Full HDTV format and can display 16.7M colors. The backlight unit is not built in.

1.2 FEATURES

CHARACTERISTICS ITEMS	SPECIFICATIONS
Screen Diagonal [in]	21.53
Pixels [lines]	1920 × 1080
Active Area [mm]	476.64 (H) x 268.11 (V)
Sub-Pixel Pitch [mm]	0.08275(H) x 0.24825(V)
Pixel Arrangement	RGB vertical stripe
Weight [g]	TYP. 590g
Display Mode	Normally White
Contrast Ratio	1000:1 Typ. (Typical value measure at CMI's module)
Glass thickness (Array / CF) [mm]	0.7 / 0.7
Viewing Angle (CR>20)	150/170(H), 140/160(V) Typ. (CR≧20) (Typical value measure at CMI's module)
Color Chromaticity	R = 0.647, 0.328) G = (0.267, 0.591) B = (0.146, 0.112) W= (0.324, 0.372) * Please refer to "color chromaticity" on p.21
Cell Transparency [%]	5.4%
Polarizer Surface Treatment	Hard coating (3H), AG (Haze 25%)

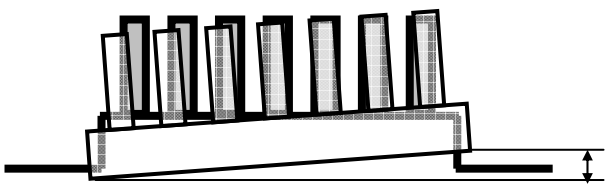
1.3 MECHANICAL SPECIFICATIONS

Item	Min.	Typ.	Max.	Unit	Note
Weight	—	590	610	g	—
I/F connector mounting position	The mounting inclination of the connector makes the screen center within ± 0.5mm as the horizontal.			—	(2)

Note (1) Please refer to the attached drawings for more information of front and back outline dimensions.

Note (2) Connector mounting position

Note (3) Please refer to sec.3.1 for more information of power consumption.



2. ABSOLUTE MAXIMUM RATINGS

2.1 ABSOLUTE RATINGS OF ENVIRONMENT

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Storage Temperature	TST	-20	+60	ºC	(1)
Operating Ambient Temperature	TOP	0	50	ºC	(1), (2)

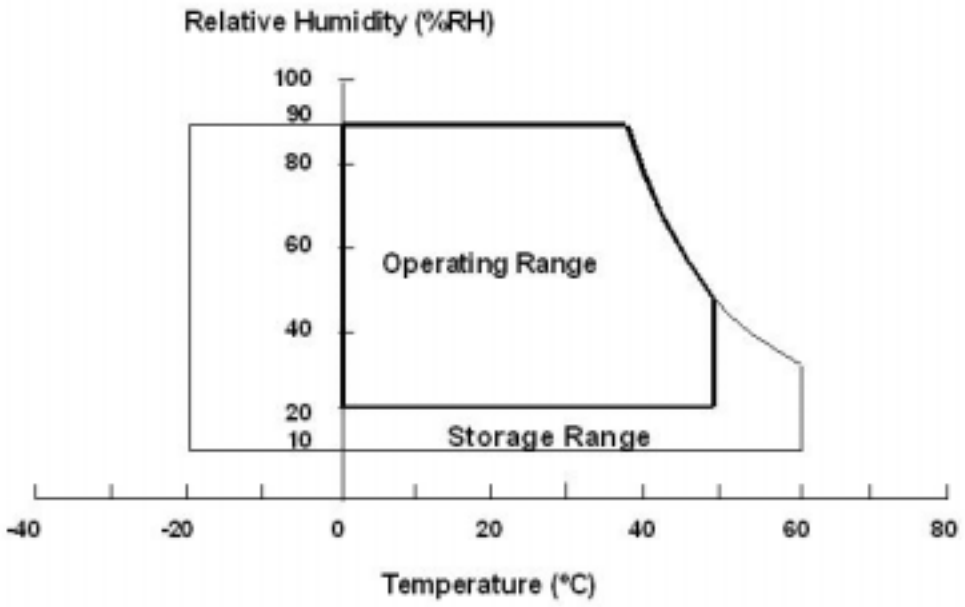
Note (1) Temperature and relative humidity range is shown in the figure below.

(a) 90 %RH Max. (Ta ≦ 40 ºC).

(b) Wet-bulb temperature should be 39 ºC Max. (Ta > 40 ºC).

(c) No condensation.

Note (2) The temperature of panel display surface area should be 0 ºC Min. and 60 ºC Max.



2.2 PACKAGE STORAGE

When storing modules as spares for a long time, the following precaution is necessary.

(a) Do not leave the module in high temperature, and high humidity for a long time, It is highly recommended to store the module with temperature from 0 to 35 ℃ at normal humidity without condensation.

(b) The module shall be stored in dark place. Do not store the TFT-LCD module in direct sunlight or fluorescent light.

2.3 ELECTRICAL ABSOLUTE RATINGS

2.3.1 TFT LCD MODULE

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Power Supply Voltage	VCC	-0.3	+6.0	V	(1)
Logic Input Voltage	VIN	-0.3	3.6	V	

Note (1) Permanent damage might occur if the module is operated at conditions exceeding the maximum values.

3. ELECTRICAL CHARACTERISTICS

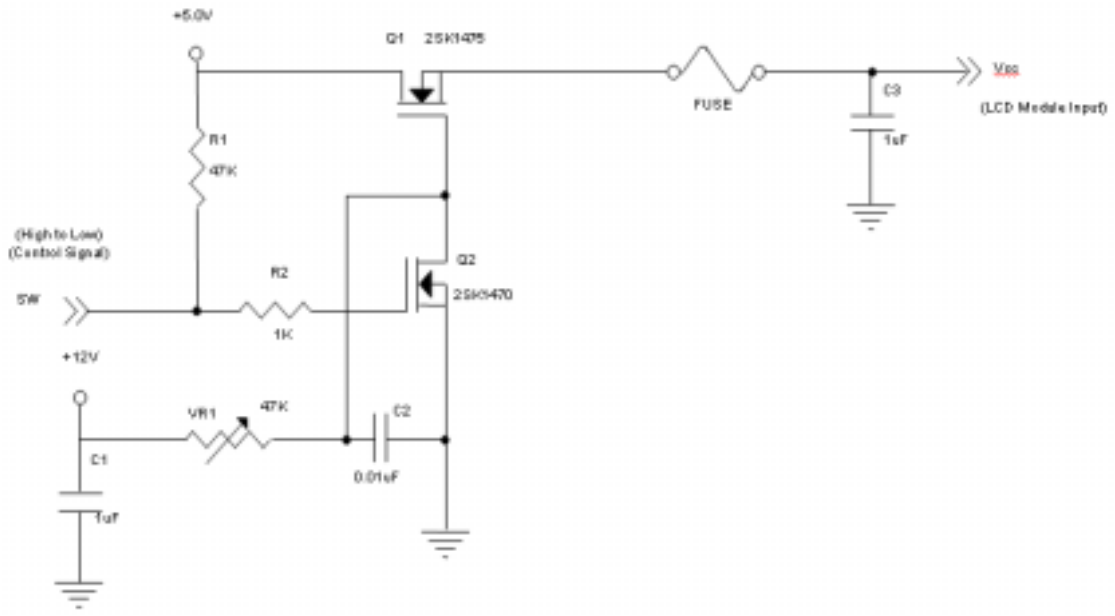
3.1 TFT LCD MODULE

(Ta = 25 ± 2 °C)

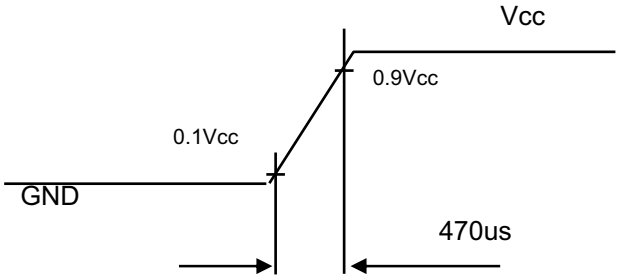
Parameter		Symbol	Value			Unit	Note
			Min.	Typ.	Max.		
Power Supply Voltage		V_{CC}	4.5	5.0	5.5	V	(1)
Rush Current		I_{RUSH}	–	–	3	A	(2)
Power consumption		P_T	–	5.3	6.3	–	(3)
Power Supply Current	White Pattern	–	–	0.51	0.61	A	(4)
	Vertical Strip(MNT)	–	–	1.06	1.26	A	
	Black Pattern	–	–	1.05	1.26	A	
LVDS interface	Differential Input High Threshold Voltage	V_{LVTH}	+100	–	–	mV	(5)
	Differential Input Low Threshold Voltage	V_{LVTL}	–	–	-100	mV	
	Common Input Voltage	V_{CM}	1.0	1.2	1.4	V	
	Differential input voltage (single-end)	$\|V_{ID}\|$	200	–	600	mV	

Note (1) The module should be always operated within the above ranges.

Note (2) Even though Inrush current is over the specified value; there is no problem if I2T of fuse Spec is satisfied. The measurement condition is shown as bellowing.



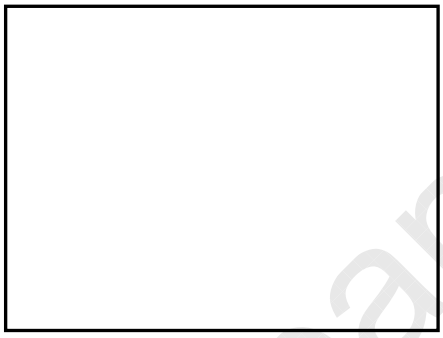
Vcc rising time is 470us



Note (3) The Specified Power consumption is under Vertical Stripe pattern.

Note (4) The specified power supply current is under the conditions at Vcc=5.0V, Ta = 25 ± 2 °C, f_v = 60 Hz, whereas a power dissipation check pattern below is displayed.

a. White Pattern

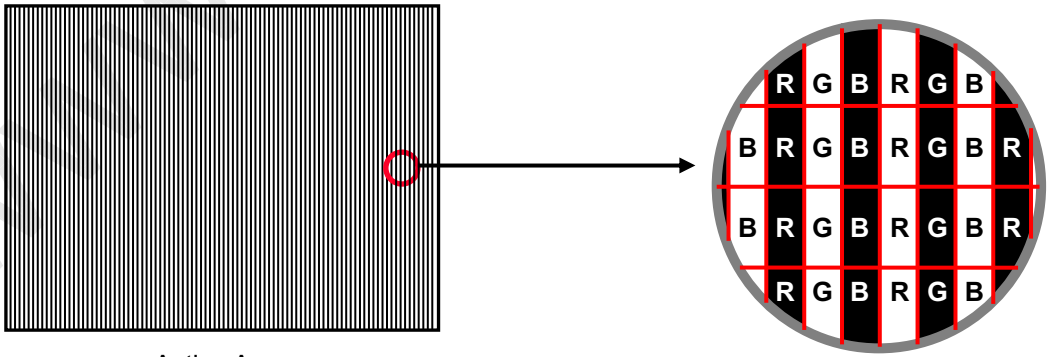


Active Area

b. Black Pattern

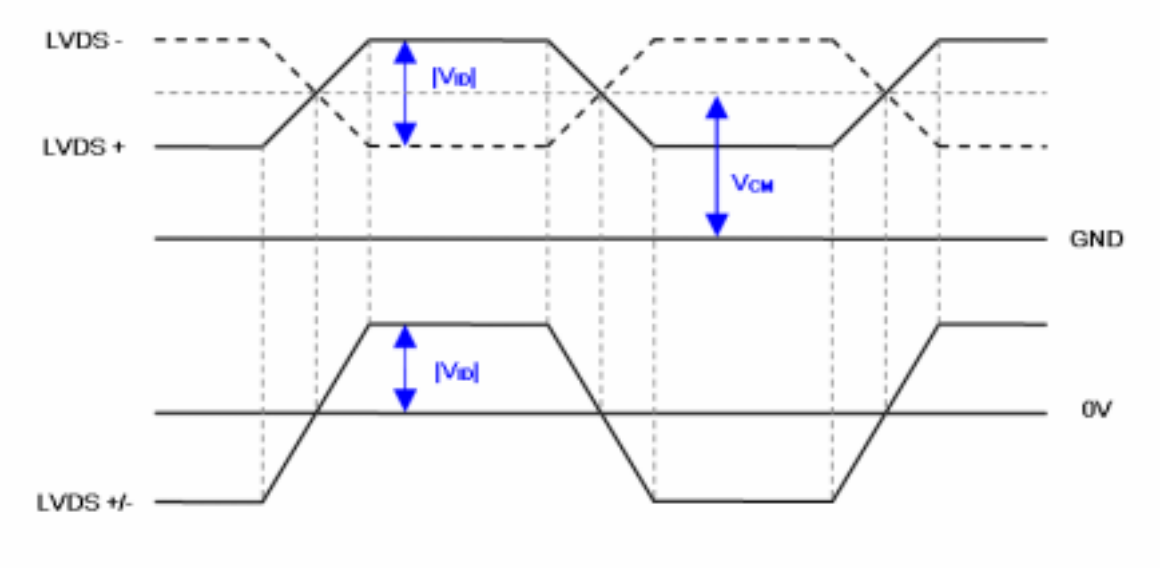
Active Area

c. Vertical Stripe Pattern



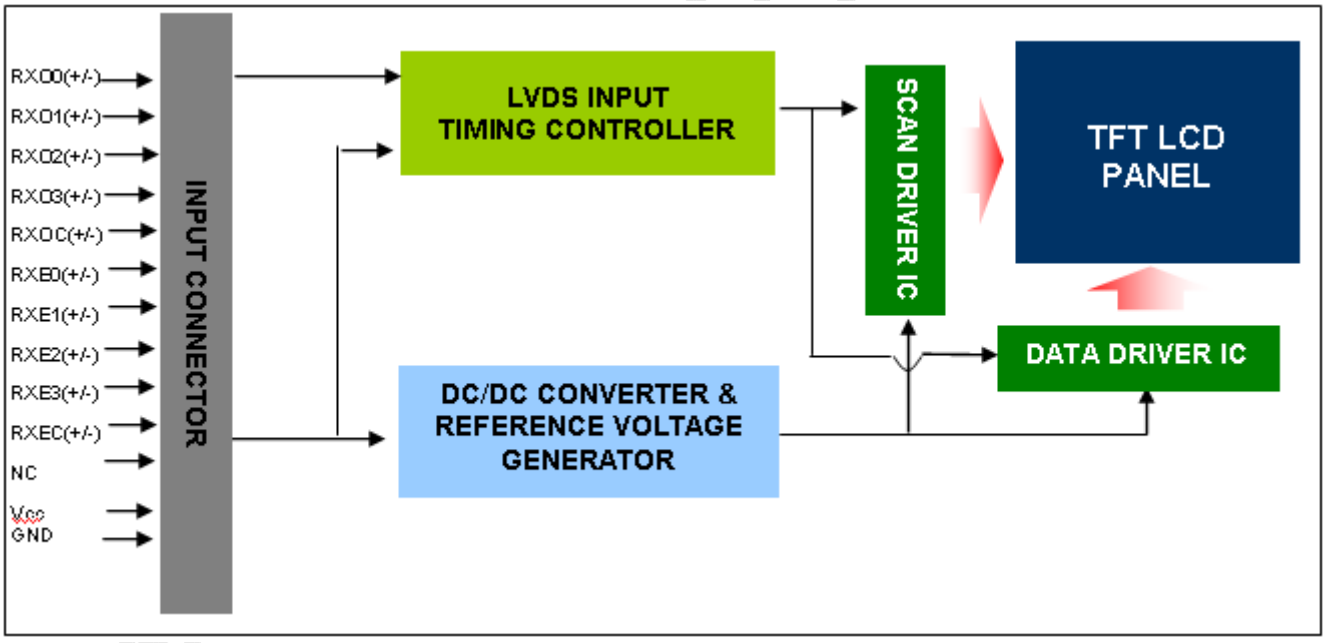
Active Area

Note (5) The LVDS input characteristics are as follows:



4. BLOCK DIAGRAM OF INTERFACE

4.1 TFT LCD MODULE



5. INPUT TERMINAL PIN ASSIGNMENT

5.1 TFT LCD Module Input

Pin	Name	Description
1	RXO0-	Negative LVDS differential data input. Channel O0 (odd)
2	RXO0+	Positive LVDS differential data input. Channel O0 (odd)
3	RXO1-	Negative LVDS differential data input. Channel O1 (odd)
4	RXO1+	Positive LVDS differential data input. Channel O1 (odd)
5	RXO2-	Negative LVDS differential data input. Channel O2 (odd)
6	RXO2+	Positive LVDS differential data input. Channel O2 (odd)
7	GND	Ground
8	RXOC-	Negative LVDS differential clock input. (odd)
9	RXOC+	Positive LVDS differential clock input. (odd)
10	RXO3-	Negative LVDS differential data input. Channel O3(odd)
11	RXO3+	Positive LVDS differential data input. Channel O3 (odd)
12	RXE0-	Negative LVDS differential data input. Channel E0 (even)
13	RXE0+	Positive LVDS differential data input. Channel E0 (even)
14	GND	Ground
15	RXE1-	Negative LVDS differential data input. Channel E1 (even)
16	RXE1+	Positive LVDS differential data input. Channel E1 (even)
17	GND	Ground
18	RXE2-	Negative LVDS differential data input. Channel E2 (even)
19	RXE2+	Positive LVDS differential data input. Channel E2 (even)
20	RXEC-	Negative LVDS differential clock input. (even)
21	RXEC+	Positive LVDS differential clock input. (even)
22	RXE3-	Negative LVDS differential data input. Channel E3 (even)
23	RXE3+	Positive LVDS differential data input. Channel E3 (even)
24	GND	Ground
25	NC	Not connection, this pin should be open.
26	NC	CMI internal test, this pin should connect to ground.
27	NC	Not connection, this pin should be open.
28	VCC	+5.0V power supply
29	VCC	+5.0V power supply
30	VCC	+5.0V power supply

Note (1) Connector Part No.: 093G30-B2001A-M4 (STARCONN) or MSCKT2407P30H, STM (信盛)

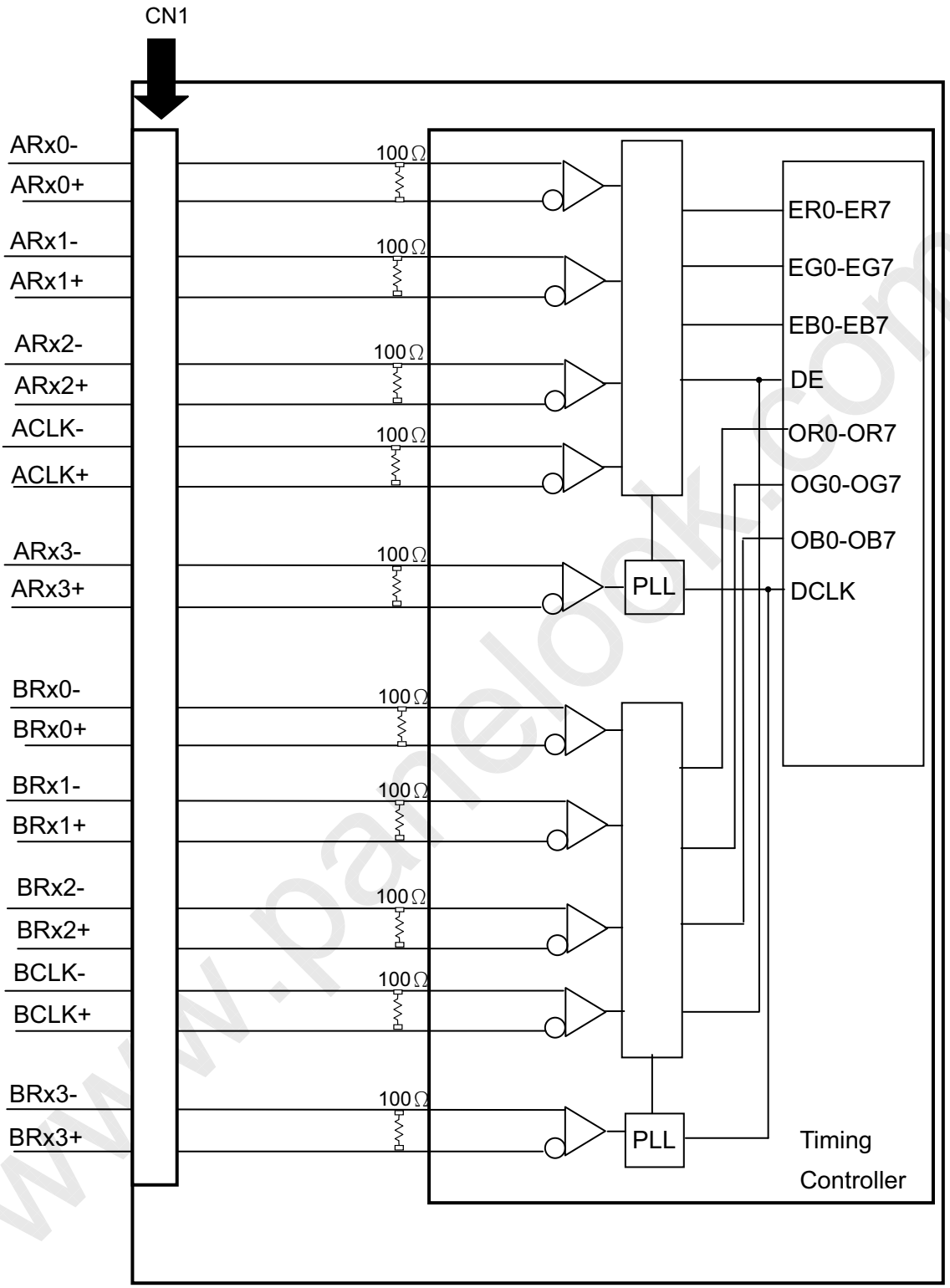
Note (2) Mating Wire Cable Connector Part No.: FI-X30H (JAE) or FI-X30HL (JAE)

Note (3) Mating FFC Cable Connector Part No.: B-F, 7083K-F12N-00L, ENTERY (恩得利)

Note (4) The first pixel is odd.

Note (5) Input signal of even and odd clock should be the same timing.

5.2 BLOCK DIAGRAM OF INTERFACE



ER0~ER7	Even pixel R data	OR0~OR7	Odd pixel R data
EG0~EG7	Even pixel G data	OG0~OG7	Odd pixel G data
EB0~EB7	Even pixel B data	OB0~OB7	Odd pixel B data
		DE	Data enable signal
		DCLK	Data clock signal

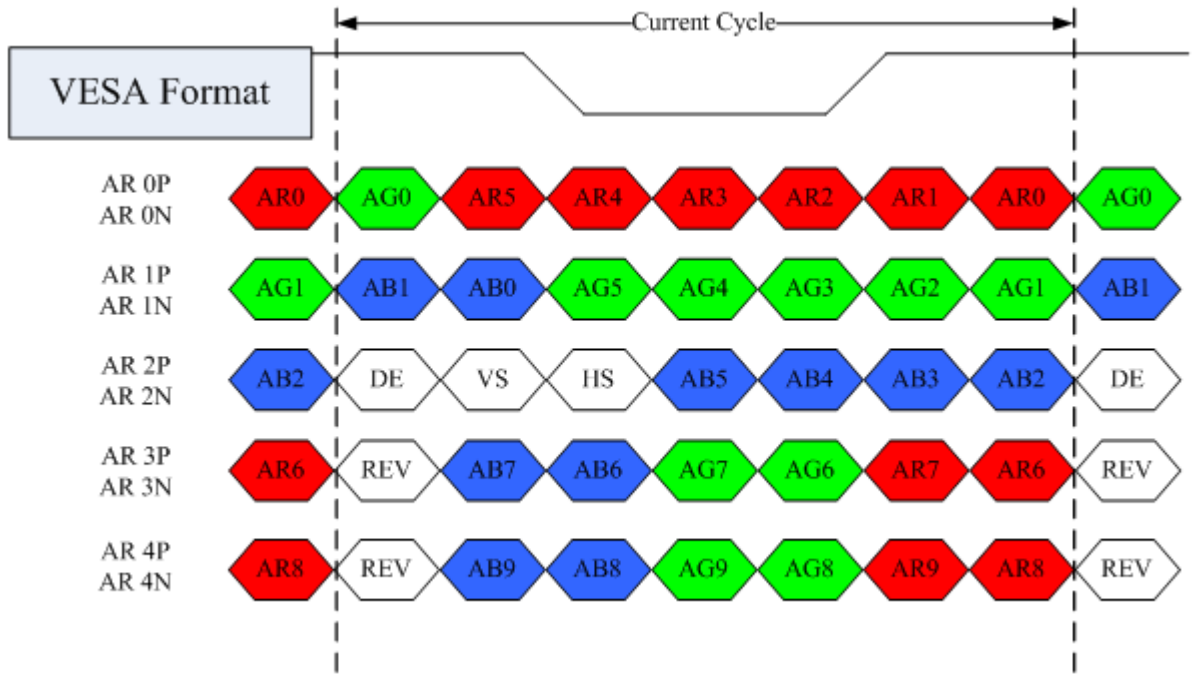
Note (1) The system must have the transmitter to drive the module.

Note (2) LVDS cable impedance shall be 50 ohms per signal line or about 100 ohms per twist-pair line when it is used differentially.

Note (3) Two pixel data send into the module for every clock cycle. The first pixel of the frame is odd pixel and the second pixel is even pixel.

5.3 LVDS INTERFACE

VESA Format: SELLVDS = L or Open



AR0~AR9 : First Pixel R Data (9; MSB, 0; LSB)

AG0~AG9 : First Pixel G Data (9; MSB, 0; LSB)

AB0~AB9 : First Pixel B Data (9; MSB, 0; LSB)

DE: Data enable signal

DCLK: Data clock signal

RSVD: Reserved

5.4 COLOR DATA INPUT ASSIGNMENT

The brightness of each primary color (red, green and blue) is based on the 8-bit gray scale data input for the color. The higher the binary input, the brighter the color. The table below provides the assignment of color versus data input.

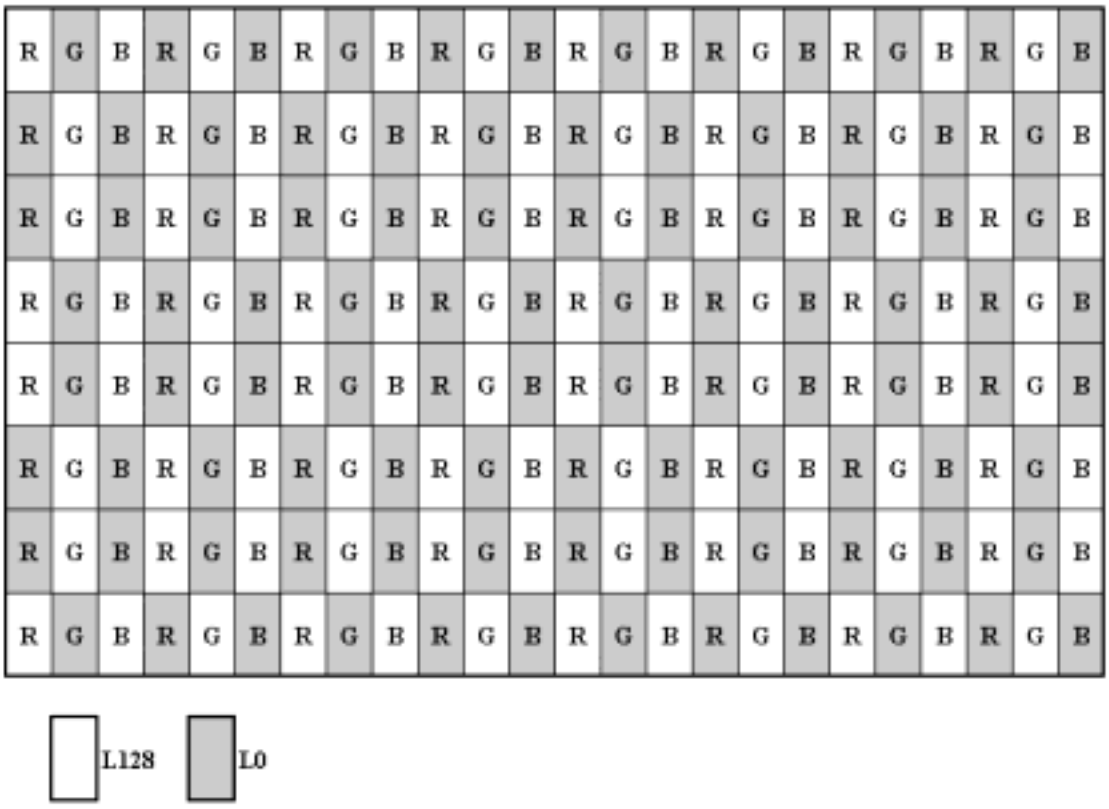
Color		Data Signal																							
		Red								Green								Blue							
		R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0
Basic Colors	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Green	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Blue	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
Gray Scale Of Red	Red(0) / Dark	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(253)	1	1	1	1	1	1	0	1	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
Gray Scale Of Green	Green(0) / Dark	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
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0
	Green(253)	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(254)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Green(255)																								
Gray Scale Of Blue	Blue(0) / Dark	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(253)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1
	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) 0: Low Level Voltage, 1: High Level Voltage

5.5 FLICKER (Vcom) ADJUSTMENT

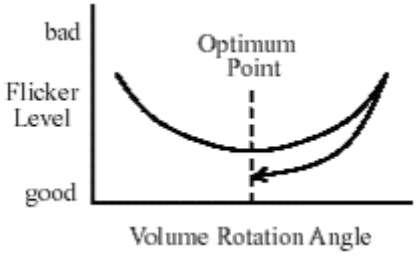
Flicker must be finely adjusted after module assembling and aging. Please follow the instructions below.

(1) Adjustment Pattern: 2H1V checker pattern as follows.



(2) Adjustment Method:

Flicker should be adjusted by turning the volume for flicker adjustment by the ceramic driver. It is adjusted to the point with least flickering of the whole screen. After making it surely overrun at once, it should be adjusted to the optimum point.



6. INTERFACE TIMING

6.1 INPUT SIGNAL TIMING SPECIFICATIONS

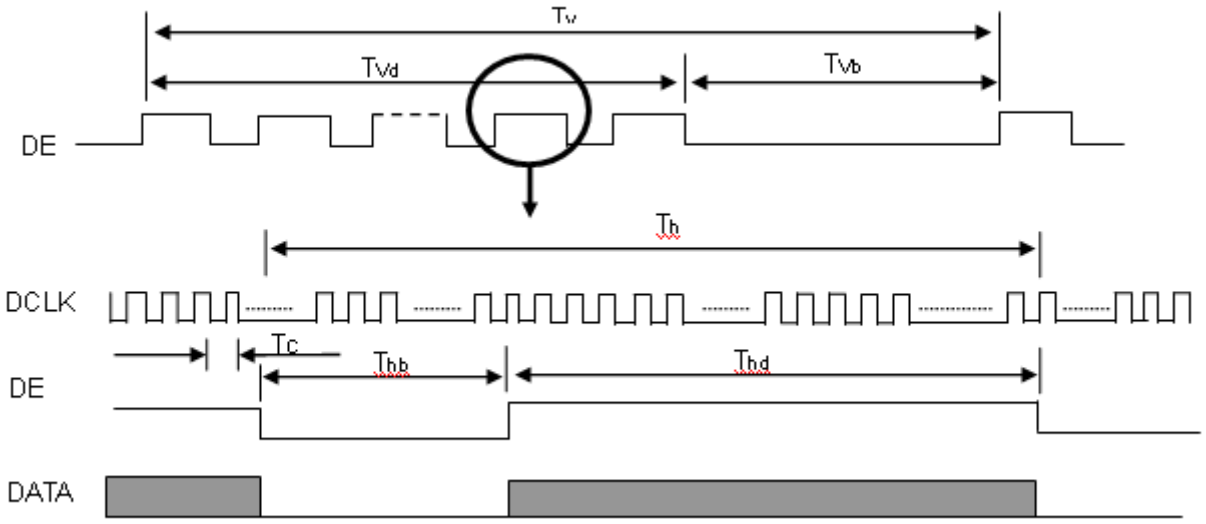
(Ta = 25 ± 2 °C)

The input signal timing specifications are shown as the following table and timing diagram.

Signal	Item	Symbol	Min.	Typ.	Max.	Unit	Note
LVDS Receiver Clock	Frequency	F_{clkin} (=1/TC)	58.54	74.25	97.98	MHz	—
	Input cycle to cycle jitter	T_{rcl}	—	—	200	ps	(2)
	Spread spectrum modulation range	F_{clkin_mod}	Fc*98%	—	Fc*102%	MHz	(3)
	Spread spectrum modulation frequency	F_{SSM}	—	—	200	KHz	
LVDS Receiver Data	Setup Time	Tlvsu	600	—	—	ps	—
	Hold Time	Tlvhd	600	—	—	ps	
Vertical Active Display Term	Frame Rate	F_r	50	60	75	Hz	—
	Total	Tv	1115	1125	1136	Th	Tv=Tvd+Tvb
	Display	Tvd	1080	1080	1080	Th	—
	Blank	Tvb	Tv-Tvd	45	Tv-Tvd	Th	—
Horizontal Active Display Term	Total	Th	1050	1100	1150	Tc	Th=Thd+Thb
	Display	Thd	960	960	960	Tc	—
	Blank	Thb	Th-Thd	140	Th-Thd	Tc	—

Note: Because this module is operated by DE only mode, Hsync and Vsync input signals are ignored.

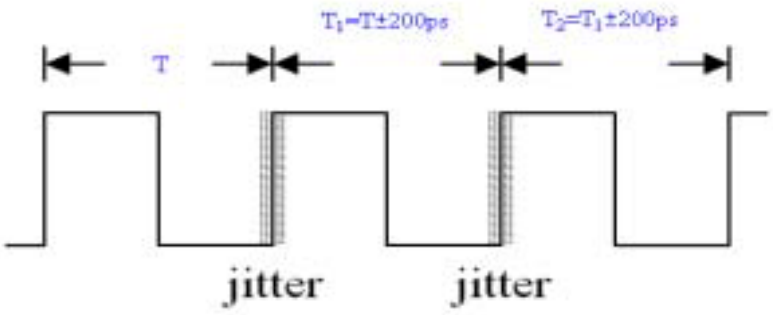
INPUT SIGNAL TIMING DIAGRAM



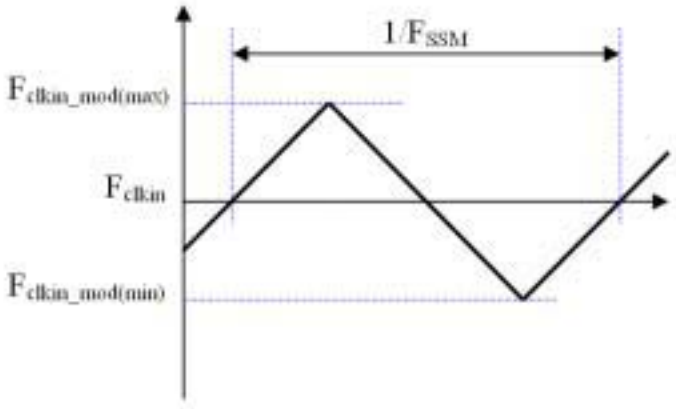
Note (1) Please make sure the range of frame rate has follow the below equation：

Fr(max) ≧ Fclkin ／ Tv×Th ≦ Fr(min)

Note (2) The input clock cycle-to-cycle jitter is defined as below figures. Trcl = I T_1 – TI

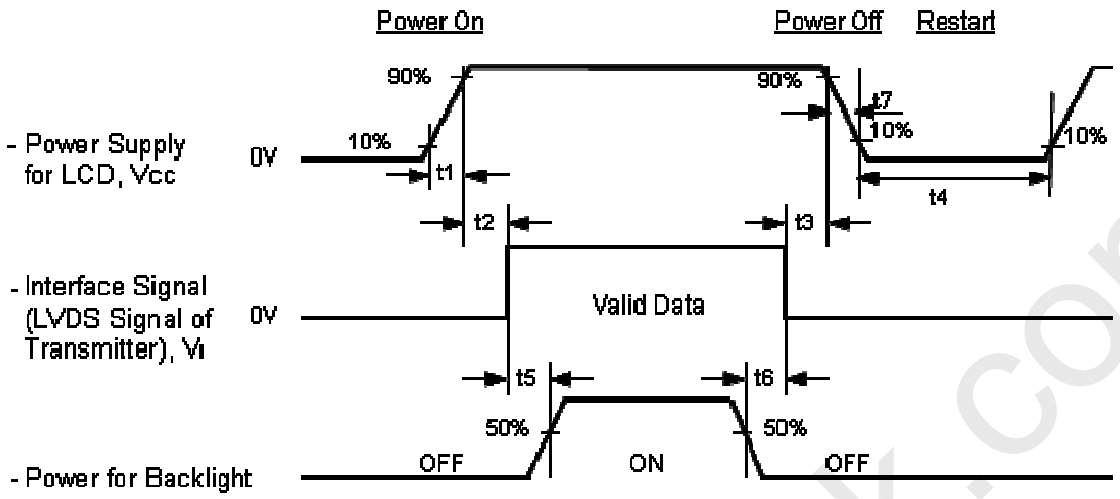


Note (3) The SSCG (Spread spectrum clock generator) is defined as below figures.



6.2 POWER ON/OFF SEQUENCE

To prevent a latch-up or DC operation of LCD module, the power on/off sequence should be as the diagram below.



Timing Specifications:

0.5	<	t1	≦	10	msec
0	<	t2	≦	50	msec
0	<	t3	≦	50	msec
		t4	≧	500	msec
		t5	≧	450	msec
		t6	≧	90	msec
5	≦	t7	≦	100	msec

Note.

(1) The supply voltage of the external system for the module input should be the same as the definition of Vcc.

(2) When the backlight turns on before the LCD operation of the LCD turns off, the display may momentarily become abnormal screen.

(3) In case of Vcc = off level, please keep the level of input signals on the low or keep a high impedance.

(4) t4 should be measured after the module has been fully discharged between power of and on period.

(5) Interface signal shall not be kept at high impedance when the power is on.

(6) CMO won't take any responsibility for the products which are damaged by the customers not following the Power Sequence.

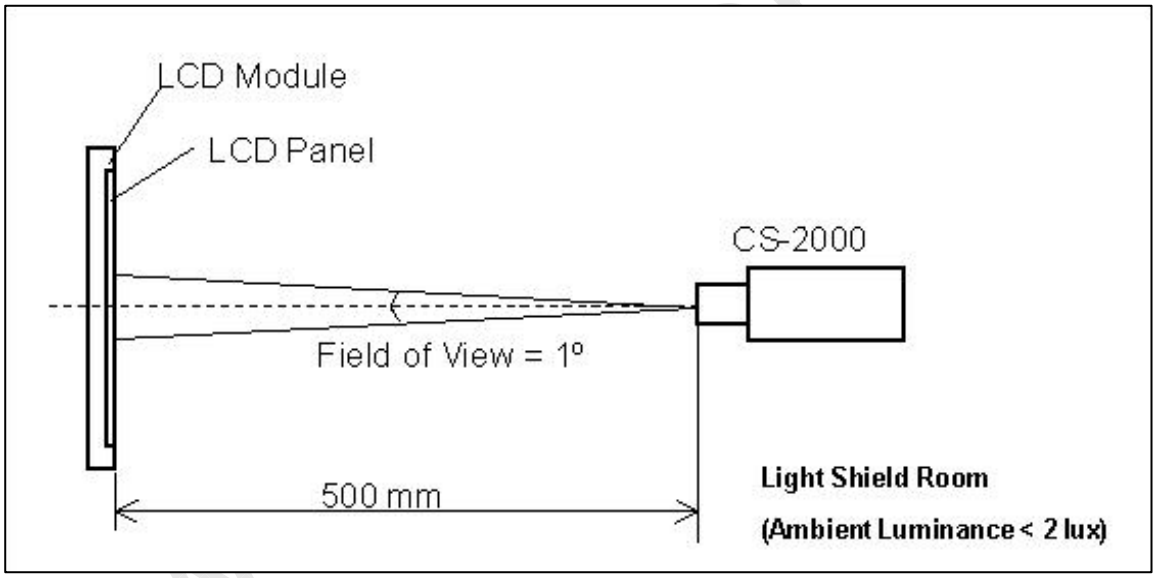
(7) There might be slight electronic noise when LCD is turned off (even backlight unit is also off). To avoid this symptom, we suggest "Vcc falling timing" to follow "t7 spec".

7. OPTICAL CHARACTERISTICS

7.1 TEST CONDITIONS

Item	Symbol	Value	Unit
Ambient Temperature	Ta	25±2	oC
Ambient Humidity	Ha	50±10	%RH
Supply Voltage	VCC	5	V
Input Signal	According to typical value in "3. ELECTRICAL CHARACTERISTICS"		
LED Current	IL	40 ± 0.6	mA

The LCD module should be stabilized at given temperature for 1 hour to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting backlight for 1 hour in a windless room.



7.2 OPTICAL SPECIFICATIONS

The relative measurement methods of optical characteristics are shown as below. The following items should be measured under the test conditions described in 7.1 and stable environment shown in 7.1.

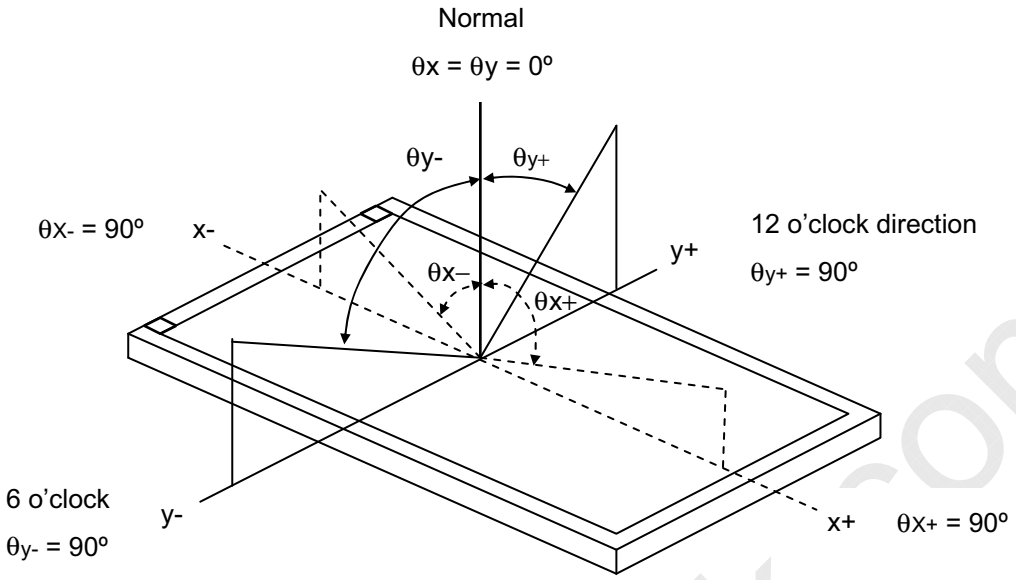
Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Color Chromaticity	Red	Rcx	θ_x=0°, θ_Y =0° Viewing Angle at Normal Direction Standard light source "C"	Typ --0.03	0.647	Typ + 0.03	—	(0),(7)
		Rcy			0.328		—	
	Green	Gcx			0.267		—	
		Gcy			0.591		—	
	Blue	Bcx			0.146		—	
		Bcy			0.112		—	
	White	Wcx			0.324		—	
		Wcy			0.372		—	
Center Transmittance		T%	θ_x=0°, θ_Y =0° with CMI module	—	5.4	6.0	%	(1), (5)
Contrast Ratio		CR		—	1000	—	—	(1),(3)
Response Time (TN)		T_R	θ_x=0°, θ_Y =0° with CMI Module@60Hz	—	1.3	2.2	ms	(4)
		T_F		—	3.7	5.8	ms	
White Variation		δW	θ_x=0°, θ_Y =0° with CMI module	—	—	1.42	—	(1),(8)
Viewing Angle	Horizontal	θ_x+ + θ_x-	CR ≧ 10 USB2000	150	170	—	—	(1) (2),(6)
	Vertical	θ_Y++ θ_Y-		140	160	—		
	Horizontal	θ_x+ + θ_x-	CR ≧ 5 USB2000	160	178	—		
	Vertical	θ_Y++ θ_Y-		150	170	—		

Note (0) Light source is the standard light source "C" which is defined by CIE and driving voltages are based on suitable gamma voltages. The calculating method is as following：

1. Measure Module's and BLU's spectrums. White is without signal input and R, G, B are with signal input. BLU (for V215H1-LE1) is supplied by CMO.
2. Calculate cell's spectrum.
3. Calculate cell's chromaticity by using the spectrum of standard light source "C"

Note (1) Light source is the BLU that is supplied by CMO and driving voltages are based on suitable gamma voltages.

Note (2) Definition of Viewing Angle (θx, θy):



Note (3) Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

Contrast Ratio (CR) = L255 / L0

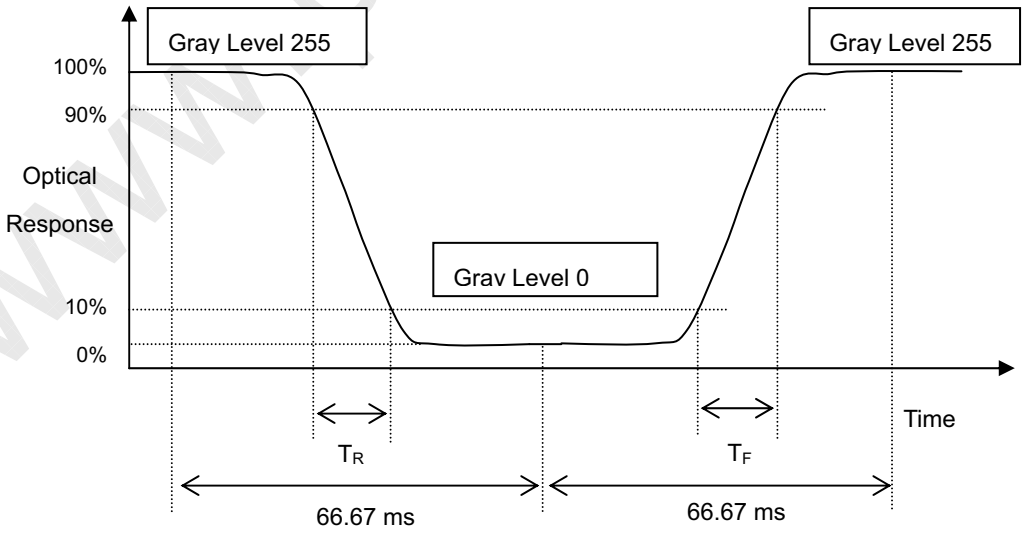
L255: Luminance of gray level 255

L 0: Luminance of gray level 0

CR = CR (5)

CR (X) is corresponding to the Contrast Ratio of the point X at Figure in Note (8).

Note (4) Definition of Response Time (T_R, T_F):



Note (5) Definition of Transmittance (T %):

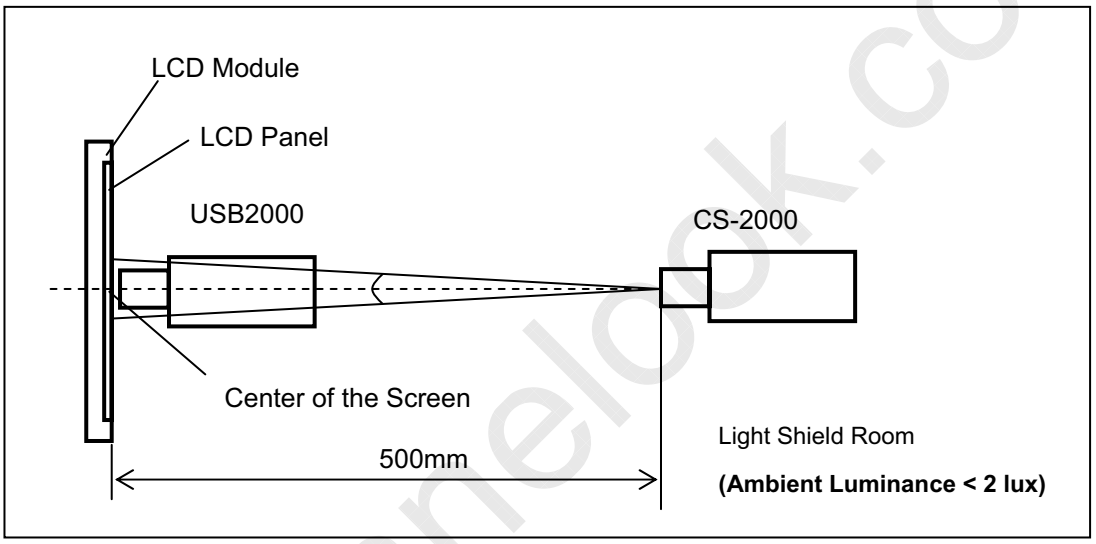
Module is without signal input.

$$\text{Transmittance} = \frac{\text{Luminance of LCD module L (5)}}{\text{Luminance of backlight } L_{BLU}(5)} * 100\%$$

L (X) and L_{BLU}(X) are corresponding to the luminance of the point X at Figure in Note (8).

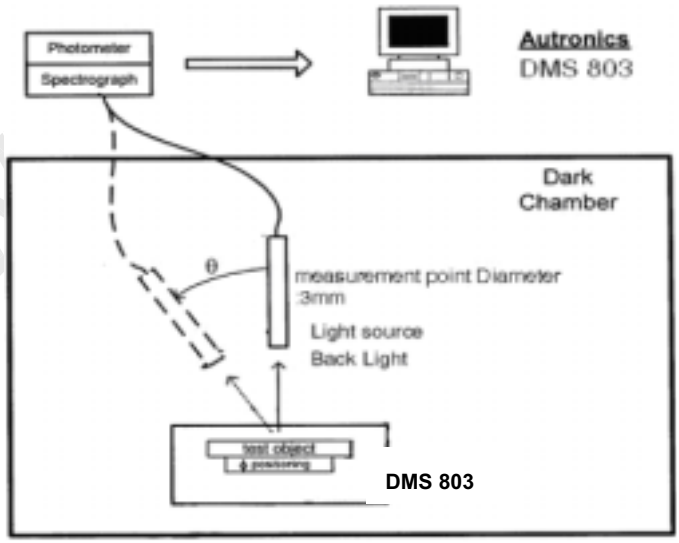
Note (6) Measurement Setup:

The LCD module should be stabilized at given temperature for 30minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 30minutes in a windless room.



Note (7) Measurement Setup:

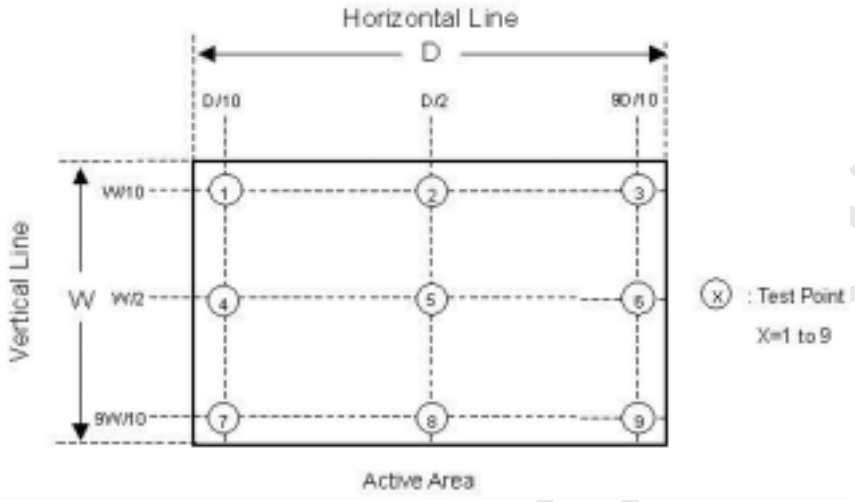
The LCD Panel should be stabilized at given temperature for 30 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after light source "C" for 30 minutes in a windless room.



Note (8) Definition of Transmittance Variation (δT %):

Measure the transmittance at 9 points

$$\delta T\% = \frac{\text{Maximum [T \%(1), T \%(2) … T \%(9)]}}{\text{Minimum [T \%(1), T \%(2) … T \%(9)]}}$$



8. PRECAUTIONS

8.1 ASSEMBLY AND HANDLING PRECAUTIONS

[1] Do not apply rough force such as bending or twisting to the module during assembly.

[2] It is recommended to assemble or to install a module into the user's system in clean working areas. The dust and oil may cause electrical short or worsen the polarizer.

[3] Do not apply pressure or impulse to the module to prevent the damage of LCD panel and Backlight.

[4] Always follow the correct power-on sequence when the LCD module is turned on. This can prevent the damage and latch-up of the CMOS LSI chips.

[5] The distance between COF edge and rib of BLU must bigger than 5mm. This can prevent the damage of COF when assemble the module.

[6] Do not design sharp-pointed structure / parting line / tooling gate on the COF position of plastic parts, because the burr will scrape the COF.

[7] If COF would bended to assemble in the module. Do not put the IC location on the bending corner of COF.

[8] The gap between COF IC and any structure of BLU must bigger than 2mm. This can prevent the damage of COF IC

[9] Bezel opening must have no burr. Burr will scrape the panel surface.

[10] Bezel of module and bezel of set can not press or touch the panel surface. It will make light leakage or scrape.

[11] When module used FFC / FPC, but no FFC / FPC to be attached in the open cell. Customer can refer the FFC / FPC drawing and buy it by self.

[12] The gap between Panel and any structure of Bezel must bigger than 2mm. This can prevent the damage of Panel.

[13] Do not plug in or pull out the I/F connector while the module is in operation.

[14] Do not disassemble the module.

[15] Use a soft dry cloth without chemicals for cleaning, because the surface of polarizer is very soft and easily scratched.

[16] Moisture can easily penetrate into LCD module and may cause the damage during operation.

[17] When storing modules as spares for a long time, the following precaution is necessary.

[17.1] Do not leave the module in high temperature, and high humidity for a long time. It is highly recommended to store the module with temperature from 0 to 35℃at normal humidity without condensation.

[17.2] The module shall be stored in dark place. Do not store the TFT-LCD module in direct sunlight or fluorescent light.

[18] When ambient temperature is lower than 10ºC, the display quality might be reduced.

8.2 SAFETY PRECAUTIONS

[1] The startup voltage of a Backlight is approximately 1000 Volts. It may cause an electrical shock while assembling with the inverter. Do not disassemble the module or insert anything into the Backlight unit.

[2] If the liquid crystal material leaks from the panel, it should be kept away from the eyes or mouth. In case of contact with hands, skin or clothes, it has to be washed away thoroughly with soap.

[3] After the module's end of life, it is not harmful in case of normal operation and storage.

9. DEFINITION OF LABELS

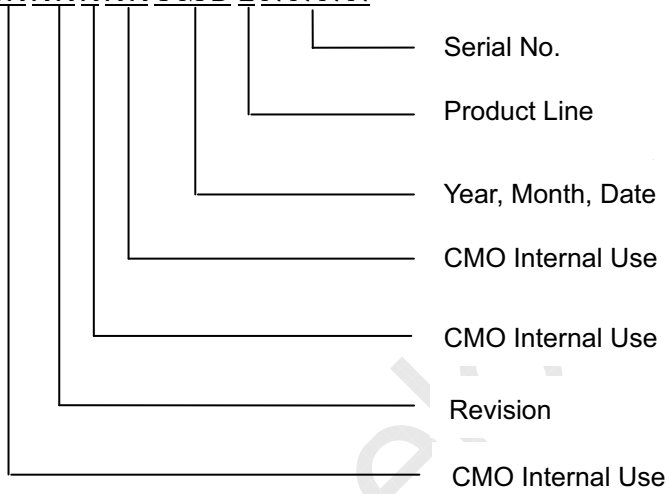
9.1 CMI MODULE LABEL

The barcode nameplate is pasted on each module as illustration, and its definitions are as following explanation.

(a) Model Name: V215H1-PE1

(b) Revision: Rev. XX, for example: A0, A1… B1, B2… or C1, C2…etc.

(c) Serial ID: X X X X X X Y M D L N N N N



Serial ID includes the information as below:

(a) Manufactured Date: Year: 0~9, for 2000~2009, 2010: A, 2011: B …..(not include I, O)
Month: 1~9, A~C, for Jan. ~ Dec.
Day: 1~9, A~Y, for 1st to 31st, exclude I, O, and U.

(b) Revision Code: Cover all the change

(c) Serial No.: Manufacturing sequence of product

(d) Product Line: 1 -> Line1, 2 -> Line 2 …etc.

10. PACKAGING

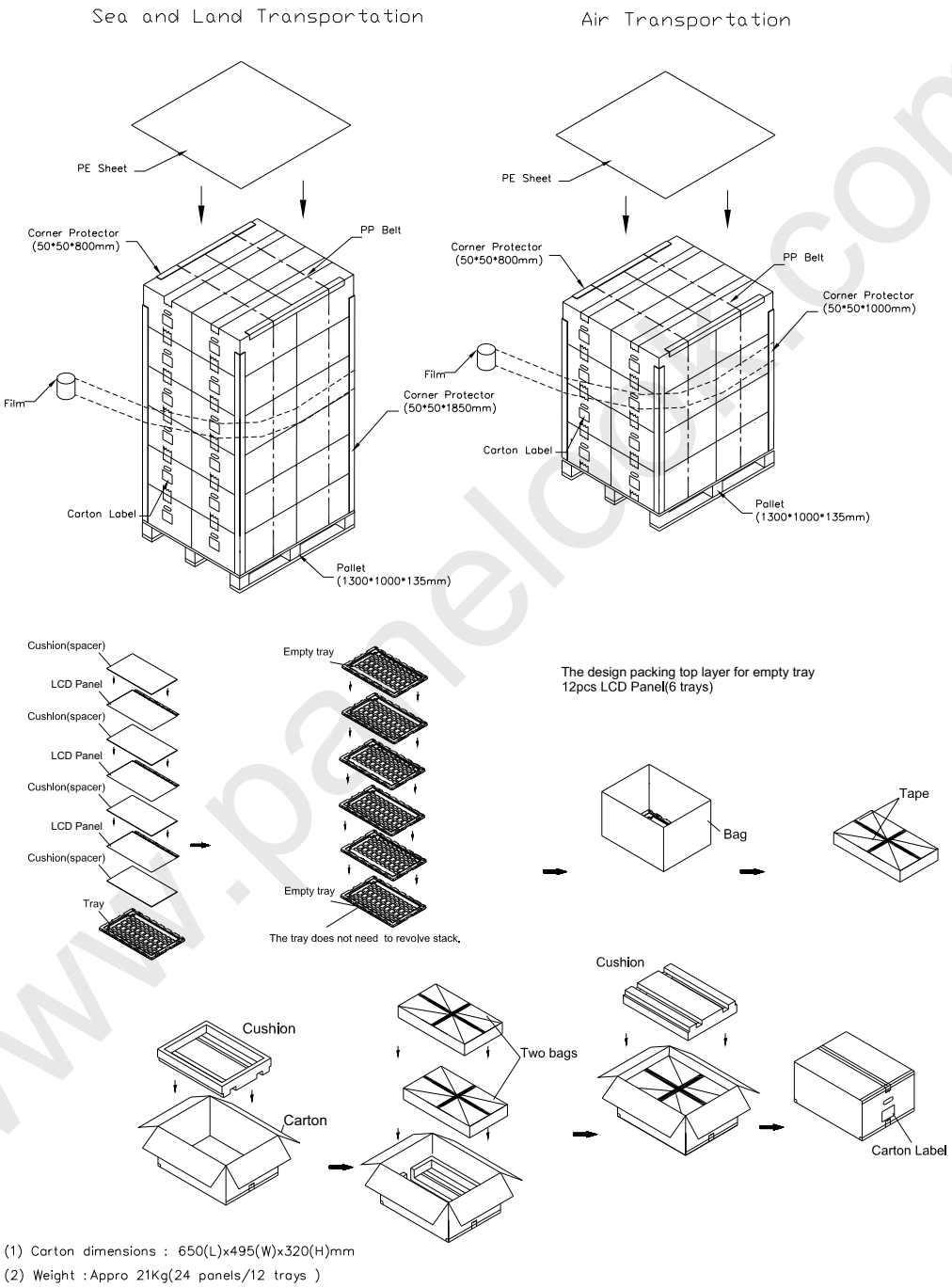
10.1 PACKAGING SPECIFICATIONS

(1) 24 open cells / 1 Box

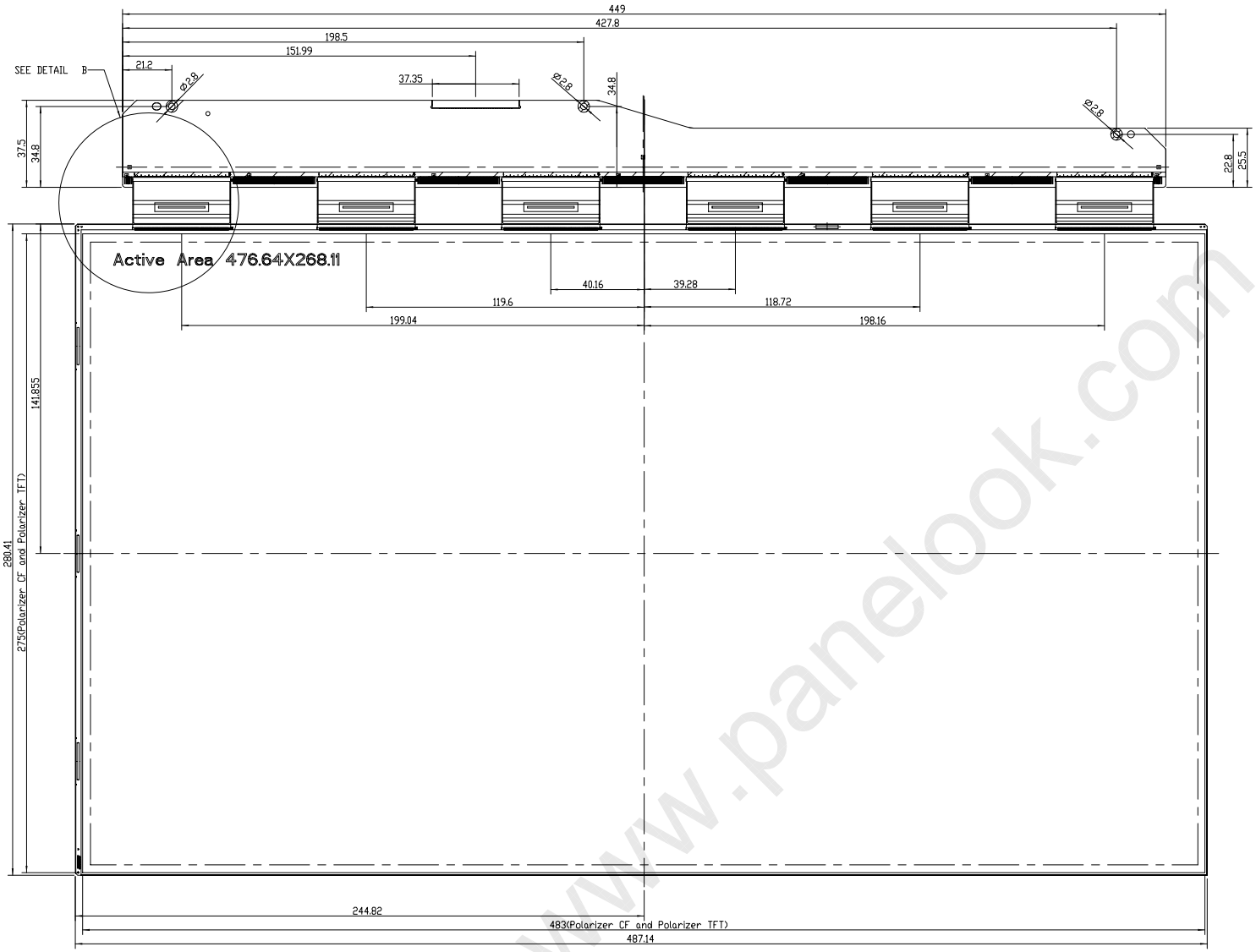
(2) Box dimensions: 650 (L) X 495 (W) X 320 (H) mm

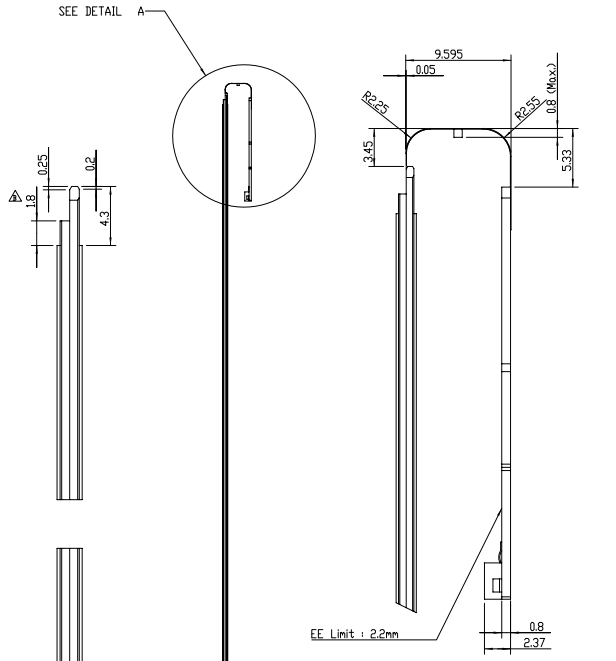
(3) Weight: approximately 21 Kg (24 open cells per box/12 tray)

10.2 PACKAGING METHOD

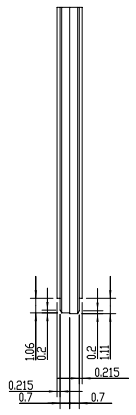


11. MECHANICAL CHARACTERISTIC

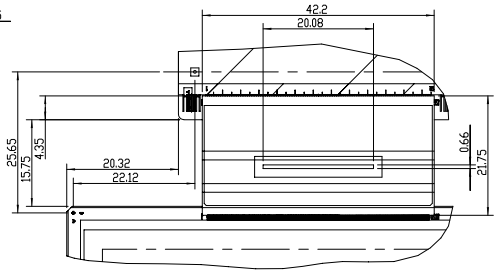




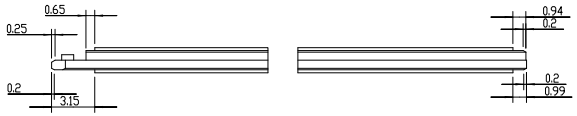
DETAIL A
SCALE 4:1



SCALE 5:1



DETAIL B
SCALE 2:1



Mark	Description	Date	Changed_By	Approved_By	ECN No.	Remark
A	Modify dimension	2009.09.14	Honglong	Alan_Lee	EA0046381	

TITLE	ASSY_PANEL_V215H1-PE1			2D REV.	B
				3D REV.	1.4
Approved	Yule_Lin	Drawing No.	M215I4102B		
Checked	Alan_Lee	Part No.	TBD		
Drawer	Honglong Hsu	Material	TBD	Sheet	1 / 1 A1
Designer	Honglong Hsu	Date	14-Sep-2009	Scale 1:1	Unit:mm

CHI MEI OPTOELECTRONICS CORP.