TITLE : HV089WX1-100

Product Specification for Customer

Rev. O

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BOE HYDIS TECHNOLOGY

SPEC. NUMBER	PRODUCT GROUP	REV.	ISSUE DATE	PAGE
	TFT-LCD	O	2008.2. 11	1 OF 27

REVISION HISTORY

REV.	ECN NO.	DESCRIPTION OF CHANGES	DATE	PREPARED
O		Initial Release	2008.02.11	Joseph Ha

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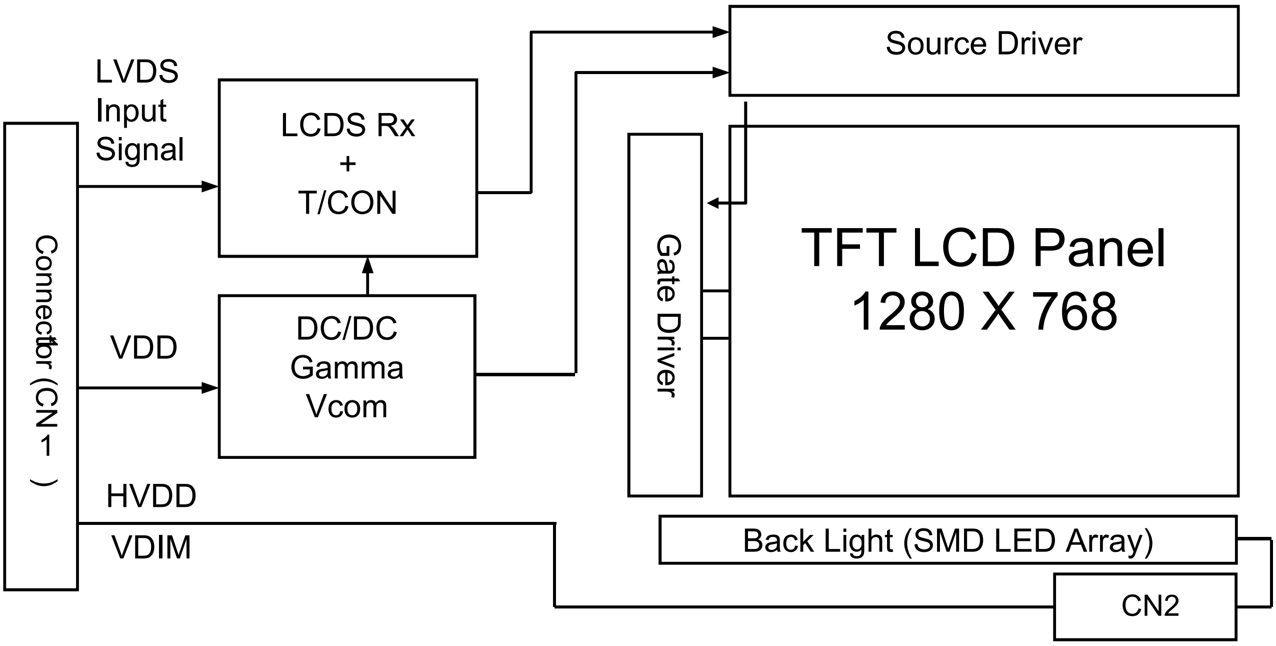
1.0 GENERAL DESCRIPTION

1.1 Introduction

HV089WX1-100 is a color active matrix TFT LCD module using amorphous silicon TFT's (Thin Film Transistors) as an active switching devices. This module has a 8.9 inch diagonally measured active area with WXGA resolutions (1280 horizontal by 768 vertical pixel array). Each pixel is divided into RED, GREEN, BLUE dots which are arranged in vertical stripe and this module can display 262,144 colors. The TFT-LCD panel used for this module is a low reflection and higher color type.



1.2 Features

- Thin and light weight
- 3.3 V power supply
- Low driving voltage and low power consumption
- 1 Channel LVDS Interface
- SMD LED (36EA) Array (Top Side/Horizontal Direction)
- 262,144 colors
- Data enable signal mode
- Front Mounting Frame
- RoHS Product
- No EDID and No LED driver

1.3 Application

- Tablet PC

1.4 General Specifications

<Table 1. General Specifications>

Parameter	Specification	Unit	Remarks
Active area	193.92 (H) × 116.35 (V)	mm	
Number of pixels	1280 (H) × 768 (V)	pixels	
Pixel pitch	0.1515 (H) × 0.1515 (V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	262,144	colors	
Display mode	Normally Black		
Dimensional outline	206.6±0.3(W) × 133.0±0.3(V) × 5.25 (D/Max)	mm	Note 1
Luminance of White	300 (Typ.)	Cd/m^2	At Center
Weight	130(Typ.) ± 5 (Min. / Max.)	g	
Back-light	SMD LED (36EA) Array		

Note 1: at PCB side

2.0 ABSOLUTE MAXIMUM RATINGS

The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit.

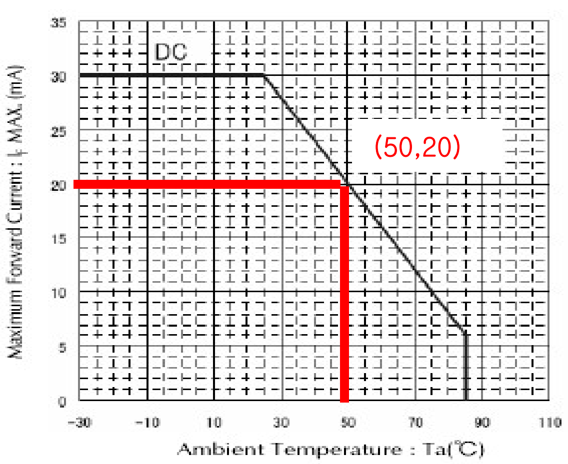
Ta=25+/-2°C

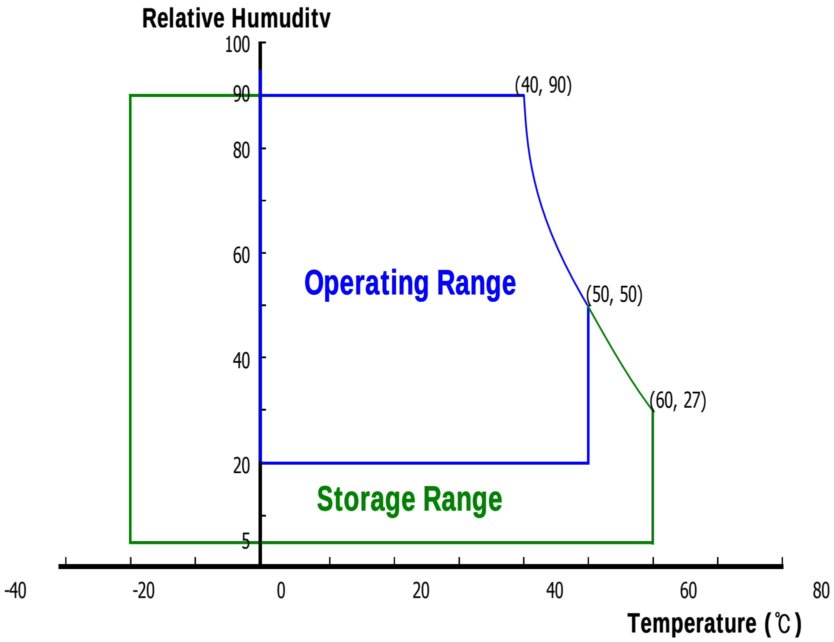
Parameter		Symbol	Min.	Max.	Unit	Remarks
Logic Power Supply Voltage		V_{DD}	-0.3	4.0	V	
Logic Power Supply Voltage		V_{IN}	-0.3	V_{DD}+0.3	V	
Back-light Power Supply Voltage		HV_{DD}	-0.3	40	V	
Back-light LED Current	25℃	I_{LED}	-	30	mA	Note 1
	50℃	I_{LED}	-	20	mA	
Back-light LED Reverse Voltage		V_R	-	5	V	
Operating Temperature		T_{OP}	0	+50	℃	Note 1, 2
Storage Temperature		T_{SP}	-20	+60	℃	

Note 1. Ambient temperature vs allowable forward current are shown in the figure below.

Note 2. Temperature and relative humidity range are shown in the figure below.
90% RH Max. (40℃ ≥ Ta)
Maximum wet - bulb temperature at 39℃ or less. (> 40℃) No condensation.

Ambient Temperature vs Maximum Forward Current





3.0 ELECTRICAL SPECIFICATIONS

3.1 Electrical Specifications

< Table 3. Electrical Specifications >

Parameter		Min.	Typ.	Max.	Unit	Remarks
Logic Power Supply Voltage	V_{DD}	3.0	3.3	3.6	V	Note 1
Logic Power Supply Current	I_{DD}	-	330	500	mA	Note 1
Back-light Anode Supply Voltage	V_{anode}	-	19.2	25.8	V	Note 2
Back-light Cathode Supply Voltage	$V_{cathode}$	-	0	4.8	V	Note 2
Back-light PWM Frequency	F_{PWM}	100	-	500	Hz	
High Level Differential Input Signal Voltage	V_{IH}	-	-	+100	mV	V_{CM} = +1.2V
Low Level Differential Input Signal Voltage	V_{IL}	-100	-	-	mV	
Back-light LED Voltage / Back-light LED Total Voltage	V_{LED} / V_{BL}	2.7/ 16.2	3.2/ 19.2	3.5/ 21.0	V	
Back-light LED Current / Back-light LED Total Current	I_{LED} / I_{BL}	15.2/ 91.2	16/ 96	16.8/ 100.8	mA	
Life Time		12,000	-	-	Hrs	Based on LED
Power Consumption	P_D	-	1.09	1.65	W	Note 1
	P_{LED}	-	1.84	2.12	W	Note 2, 3
	P_{total}	-	2.84	3.77	W	Note 1, 2, 3
Power Consumption (EBL)	P_{EBL}	-	1.46	1.51	W	Note 1, 2, 3

Notes : 1. The supply voltage is measured and specified at the interface connector of LCM.
The current draw and power consumption specified is for 3.3V at 25℃.
a) Typ : Window XP pattern
b) Max : Vertical Sub line pattern
c) EBL : Mosaic pattern (32 x 32)
2. The power supply voltage and current is measured and specified at the interface connector of LCM including LED Driver.
3. Reference value, which is measured with LED Driver for 12V.
4. Reference value, which is measured without LED Driver.
5. Calculated value for reference (V_{LED} × I_{LED} × # of LEDs (36EA)).

4.0 OPTICAL SPECIFICATION

4.1 Overview

The test of Optical specifications shall be measured in a dark room (ambient luminance ≤ 1 lux and temperature = 25±2℃) with the equipment of Luminance meter system (Goniometer system and TOPCONE BM-5) and test unit shall be located at an approximate distance 50cm from the LCD surface at a viewing angle of θ and Φ equal to 0°. We refer to $\theta_{Ø=0}$ (=θ_3) as the 3 o'clock direction (the "right"), $\theta_{Ø=90}$ (= θ_{12}) as the 12 o'clock direction ("upward"), $\theta_{Ø=180}$ (= θ_9) as the 9 o'clock direction ("left") and $\theta_{Ø=270}$(= θ_6) as the 6 o'clock direction ("bottom"). While scanning θand/or Ø, the center of the measuring spot on the Display surface shall stay fixed. The backlight should be operating for 30 minutes prior to measurement. VDD shall be 3.3+/- 0.3V at 25°C. Optimum viewing angle direction is 6 o'clock.

4.2 Optical Specifications

<Table 4. Optical Specifications>

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle range	Horizontal	Θ_3	CR > 10	85	89	90	Deg.	Note 1
		Θ_9		85	89	90	Deg.	
	Vertical	Θ_{12}		85	89	90	Deg.	
		Θ_6		85	89	90	Deg.	
Luminance Contrast ratio		CR	Θ = 0°	450	500	-		Note 2
Luminance of White	1 Point	Y_w	Θ = 0°	270	300	-	cd/m^2	
White Luminance uniformity	5 Points	ΔY5		80	85	-	%	Note 3
	13 Points	ΔY13		60	70	-		
White Chromaticity		x_w	Θ = 0°	0.260	0.300	0.340		Note 4
		y_w		0.280	0.320	0.360		
Reproduction Of color	Red	x_R	Θ = 0°	0.523	0.563	0.603		
		y_R		0.314	0.354	0.394		
	Green	x_G		0.291	0.331	0.371		
		y_G		0.502	0.542	0.582		
	Blue	x_B		0.106	0.146	0.186		
		y_B		0.077	0.117	0.157		
Response Time	Rise	T_r	Ta= 25° C Θ = 0°	-	28	-	ms	Note 5
	Decay	T_d						
Cross Talk		CT	Θ = 0°	-	-	2.0	%	Note 6

Note :

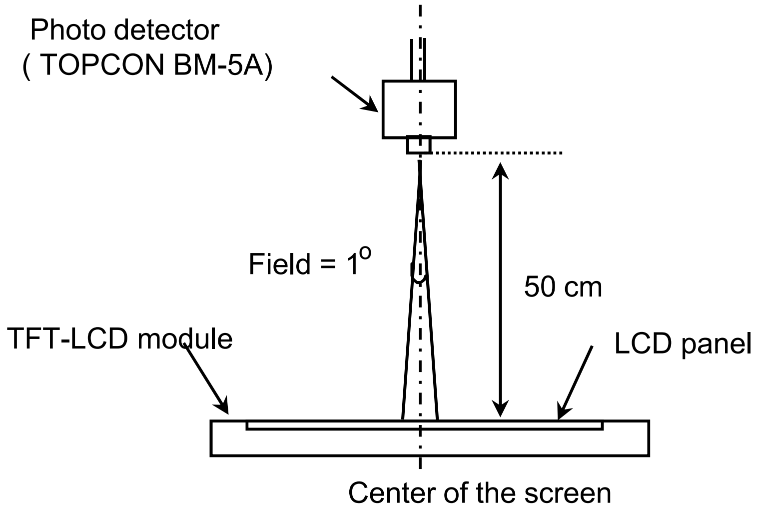
1. Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface.
   (see FIGURE 1 shown in Appendix)
2. Contrast measurements shall be made at viewing angle of $\Theta = 0^\circ$ and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state. (See FIGURE 1 shown in Appendix) Luminance Contrast Ratio (CR) is defined mathematically.

$$CR = \frac{\text{Luminance when displaying a white raster}}{\text{Luminance when displaying a black raster}}$$

3. The White luminance uniformity on LCD surface is then expressed as :
   ΔY = Maximum Luminance of 5(or 13) points / Minimum Luminance of 5(or 13) points.
   (see FIGURE 2 shown in Appendix)
4. The color chromaticity coordinates specified in Table 4 shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Measurements shall be made at the center of the panel.
5. The electro-optical response time measurements shall be made as FIGURE 3 shown in Appendix by switching the "data" input signal OFF and ON. The times needed for the luminance to change from 10% to 90% is Tr, and 90% to 10% is Td.
6. Cross-Talk of one area of the LCD surface by another shall be measured by comparing the luminance (Y_A) of a 25mm diameter area, with all display pixels set to a gray level, to the luminance (Y_B) of that same area when any adjacent area is driven dark.
   (see FIGURE 4 shown in Appendix)

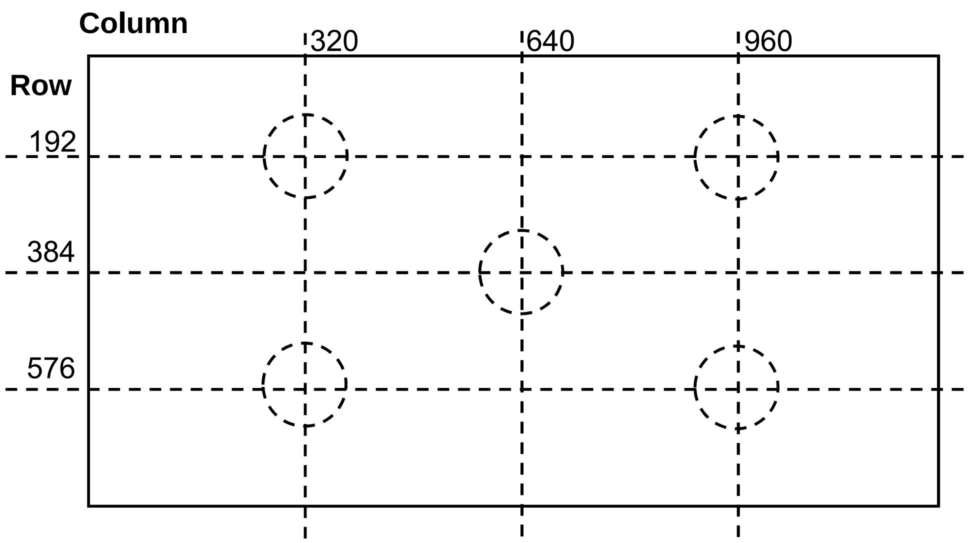
4.3 Optical Measurements

Figure 1. Measurement Set Up



Optical characteristics measurement setup

Figure 2. White Luminance and Uniformity Measurement Locations (5 points)

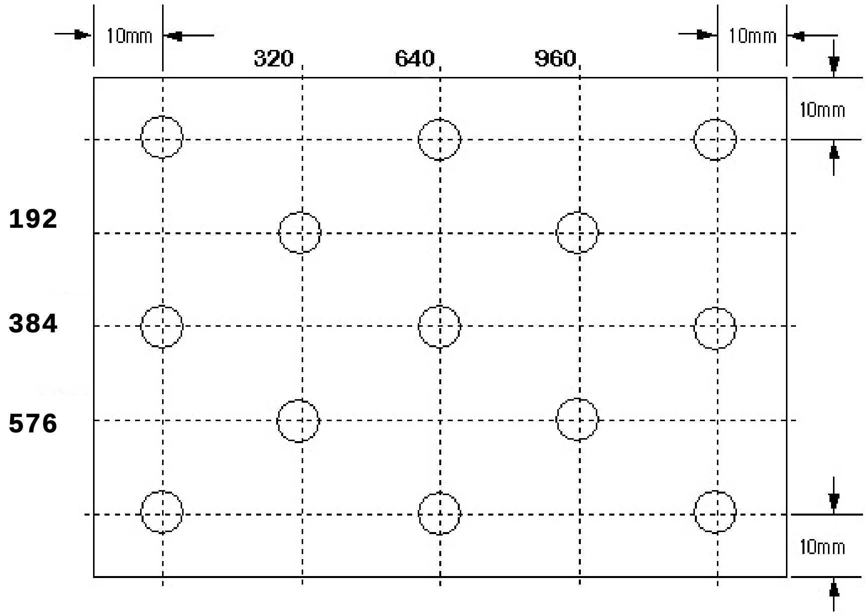


Note 4.

Luminance of white is defined as luminance values of 5 points across the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in Figure 2 for a total of the measurements per display.

* Yw = (Sum of 5 Points Luminance / 5)
* LED Condition = (Duty Ratio 100%, LED current 16.0mA)

Figure 3. Uniformity Measurement Locations (13 points)



Note 5.
The White luminance uniformity on LCD surface is then expressed as : ΔY5 = (Minimum Luminance of five points / Maximum Luminance of five points) X 100% (see Figure 2) , ΔY13 = (Minimum Luminance of 13 points /Maximum Luminance of 13 points) X 100% (see Figure 3).

Figure 4. Response Time Testing

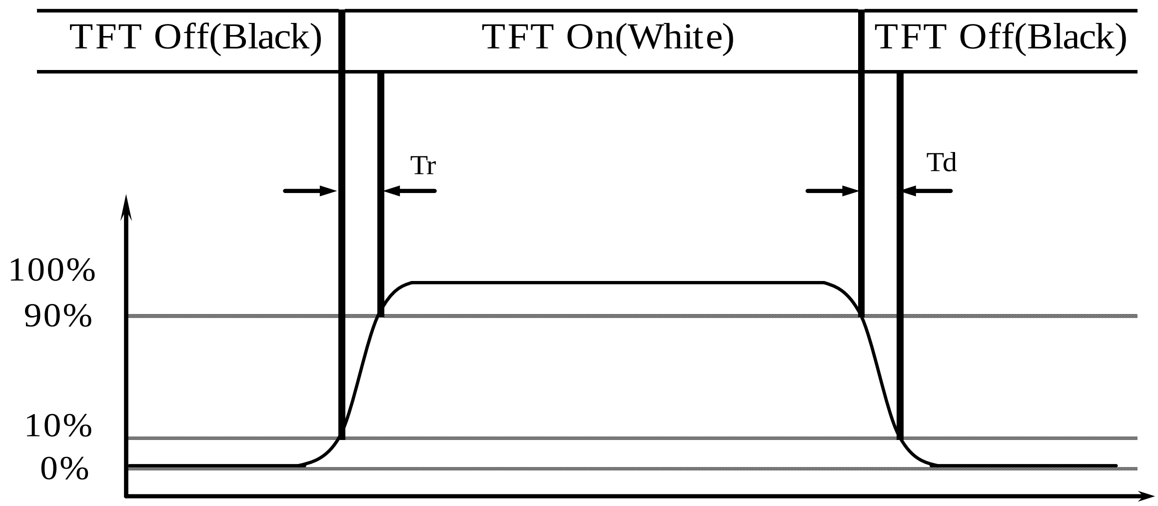
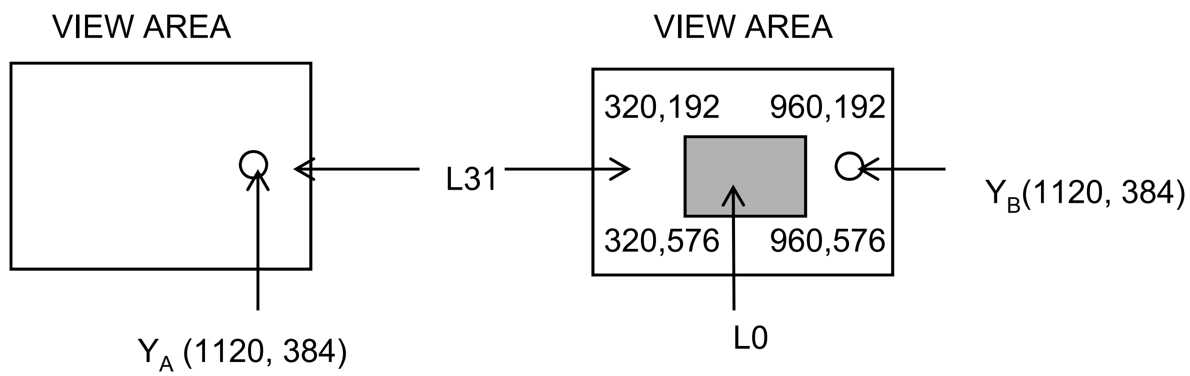


Figure 5. Cross Modulation Test Description



$$\text{Cross-Talk (\%)} = \left| \frac{Y_B - Y_A}{Y_B} \right| \times 100$$

Where:

Y_A = Initial luminance of measured area (cd/m^2)

Y_B = Subsequent luminance of measured area (cd/m^2)

The location measured will be exactly the same in both patterns

Note 6.

The electro-optical response time measurements shall be made as Figure 4 by switching the “data” input signal ON and OFF. The times needed for the luminance to change from 10% to 90% is Tr, and 90% to 10% is Td.

Note 7.

Cross-Talk of one area of the LCD surface by another shall be measured by comparing the luminance (YA) of a 25mm diameter area, with all display pixels set to a gray level, to the luminance (YB) of that same area when any adjacent area is driven dark (Refer to Figure 5).

5.0 INTERFACE CONNECTION.

5.1 Electrical Interface Connection

<Table 5. Pin Assignments for the Interface Connector>

CN1	Interface connector	I-PX / 20347-030E-02 or equivalent
CN2	FPC connector	I-PEX / 20397-008E or equivalent

Pin No	Symbol	Function	Remark
1	VDD1	Power Supply: +3.3V	
2	VDD2	Power Supply: +3.3V	
3	VDD3	Power Supply: +3.3V	
4	VDD4	Power Supply: +3.3V	
5	NC	Reserved	
6	VSS	Ground	
7	VSS	Ground	
8	VSS	Ground	
9	VSS	Ground	
10	RIN0-	LVDS Negative data signal (-)	Tx pin # 48
11	RIN0+	LVDS Positive data signal (+)	Tx pin # 47
12	VSS	Ground	
13	RIN1-	LVDS Negative data signal (-)	Tx pin # 46
14	RIN1+	LVDS Positive data signal (+)	Tx pin # 45
15	VSS	Ground	
16	RIN2-	LVDS Negative data signal (-)	Tx pin # 42
17	RIN2+	LVDS Positive data signal (+)	Tx pin # 41
18	VSS	Ground	
19	RCLKIN-	LVDS Negative clock signal (-)	Tx pin # 40
20	RCLKIN+	LVDS Positive clock signal (+)	Tx pin # 39
21	VSS	Ground	
22	NC	Reserved	
23	VCD1	LED Power Cathode	
24	VCD2	LED Power Cathode	
25	VCD3	LED Power Cathode	
26	VCD4	LED Power Cathode	
27	VCD5	LED Power Cathode	
28	VCD6	LED Power Cathode	
29	NC	Reserved	
30	VAD	LED Power Anode	

5.2. LVDS Interface

LVDS Transmitter: THC63LVDM83A or equivalent.

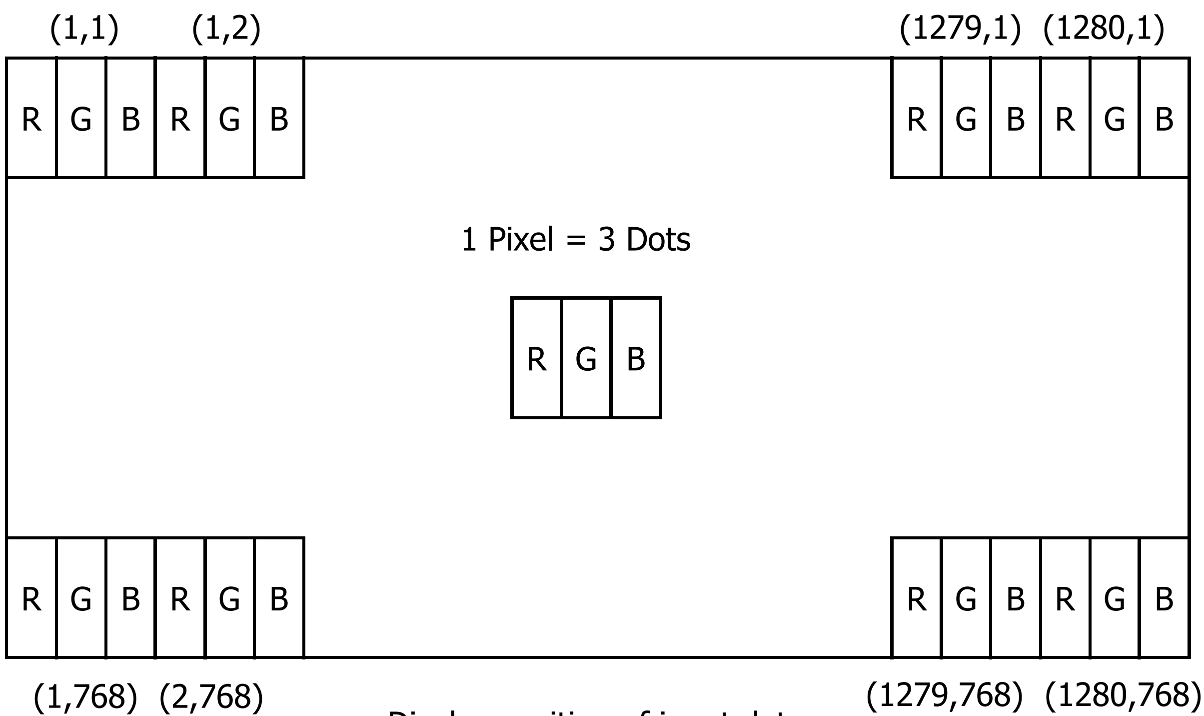
Input signal	Transmitter		Interface		DF19KR-20P-1H	Remark
	Pin No	Pin No	System (Tx)	TFT-LCD (Rx)	Pin No.	
R0	51	48 47	OUT0- OUT0+	IN0- IN0+	10 11	
R1	52					
R2	54					
R3	55					
R4	56					
R5	3					
G0	4					
G1	6	46 45	OUT1- OUT1+	IN1- IN1+	13 14	
G2	7					
G3	11					
G4	12					
G5	14					
B0	15					
B1	19					
B2	20	42 41	OUT2- OUT2+	IN2- IN2+	16 17	
B3	22					
B4	23					
B5	24					
HSYNC	27					
VSYNC	28					
DE	30					
MCLK	31	40	CLKOUT-	CLKIN-	19	
		39	CLKOUT+	CLKIN+	20	

5.3 Back-light Interface

CN2 LED FPC Connector (20397-008E, Manufactured by I-PEX)

Pin No.	Symbol	Function	Remark
1	Anode1	LED Anode Power Supply	LED Anode Power Supply (3.2V X 6 EA = 19.2V)
2	Anode2	LED Anode Power Supply	
3	Anode3	LED Anode Power Supply	
4	Anode4	LED Anode Power Supply	
5	NC	Non-Connection	
6	Cathode1	LED Cathode Power Supply	LED Cathode Power Supply
7	Cathode2	LED Cathode Power Supply	
8	Cathode3	LED Cathode Power Supply	
9	Cathode4	LED Cathode Power Supply	

5.4. Data Input Format



Display position of input data

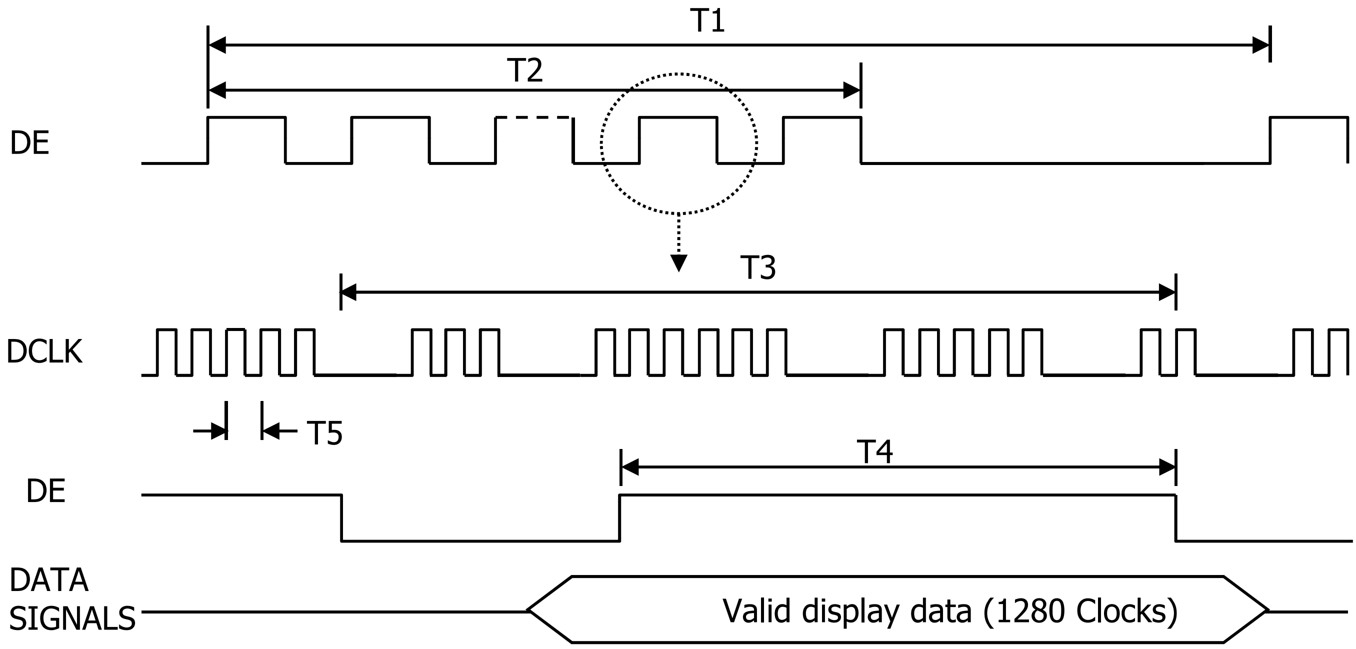
6.0. SIGNAL TIMING SPECIFICATIONS

6.1 HV089WX1-100 is operated by the only DE (Data enable) mode (LVDS Transmitter Input)

Item	Symbols	Min	Typ	Max	Unit
Frame Period	T1	804	823	-	lines
Vertical Display Period	T2	-	768	-	lines
One Line Scanning Period	T3	1350	1440	-	clocks
Horizontal Display Period	T4	-	1280	-	clocks
Clock Frequency	1/T5	-	71.11	-	MHz

7.0 SIGNAL TIMING WAVEFORMS

7.1 Timing Waveforms of Interface Signal

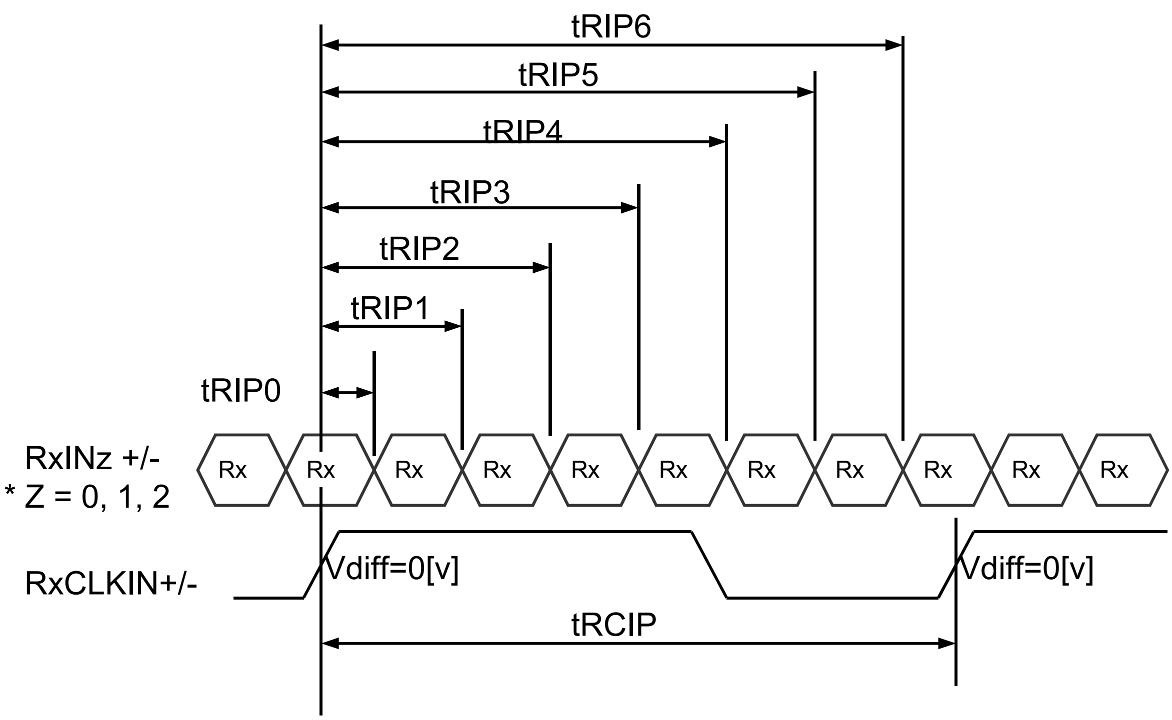


7.2 LVDS Rx Interface Timing Parameter

The specification of the LVDS Rx interface timing parameter

< LVDS Rx Interface Timing Specification>

Item	Symbol	Min.	Typ.	Max.	Unit	Remarks
CLKIN Period	tRCIP	12.50	14.43	25.00	nsec	
Input Data 0	tRIP0	-0.4	0.0	+0.4	nsec	
Input Data 1	tRIP1	tRICP/7-0.4	tRICP/7	tRICP/7+0.4	nsec	
Input Data 2	tRIP2	2 ×tRICP/7-0.4	2 ×tRICP/7	2 ×tRICP/7+0.4	nsec	
Input Data 3	tRIP3	3 ×tRICP/7-0.4	3 ×tRICP/7	3 ×tRICP/7+0.4	nsec	
Input Data 4	tRIP4	4 ×tRICP/7-0.4	4 ×tRICP/7	4 ×tRICP/7+0.4	nsec	
Input Data 5	tRIP5	5 ×tRICP/7-0.4	5 ×tRICP/7	5 ×tRICP/7+0.4	nsec	
Input Data 6	tRIP6	6 ×tRICP/7-0.4	6 ×tRICP/7	6 ×tRICP/7+0.4	nsec	



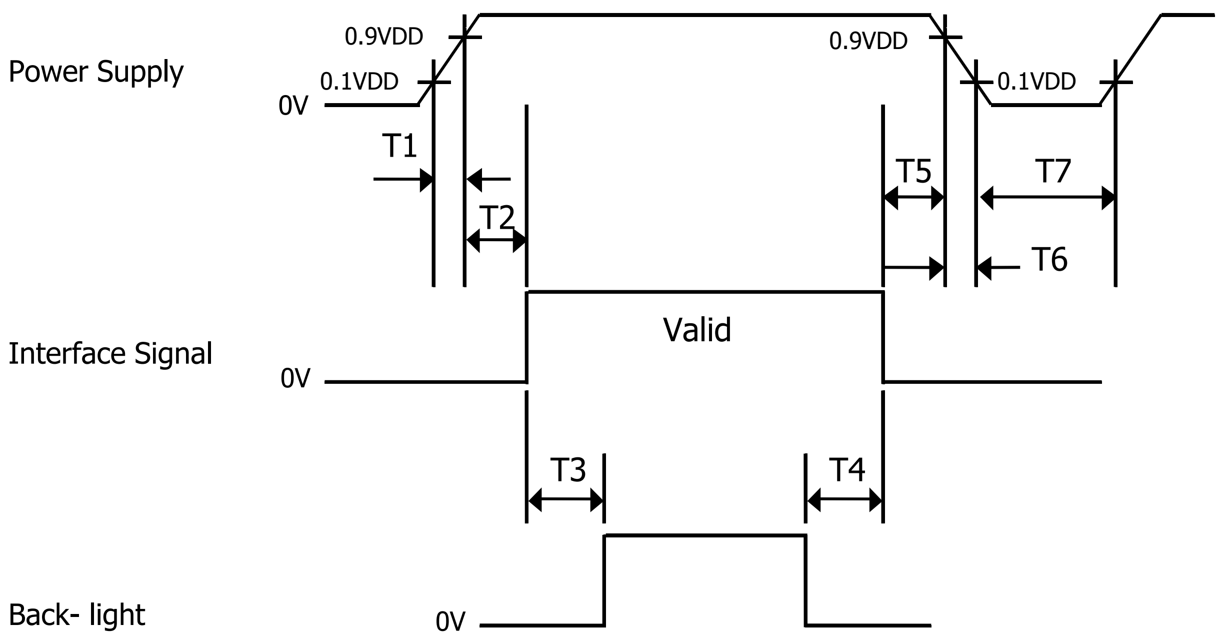
8.0 INPUT SIGNALS, BASIC DISPLAY COLORS & GRAY SCALE OF COLORS

Each color is displayed in sixty-four gray scales from a 6 bit data signal input. A total of 262,144 colors are derived from the resultant 18 bit data.

Colors & Gray Scale		Red Data						Green Data						Blue Data					
		R5	R4	R3	R2	R1	R0	G5	G4	G3	G2	G1	G0	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
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
	Green	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
	Cyan	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
	Red	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	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
Gray Scale Of Red	Black	0	0	0	0	0	0	0	0	0	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
	Darker	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	↓						↓						↓					
	▽	↓						↓						↓					
	Brighter	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	▽	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Gray Scale Of Green	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	0	0	0	0	0	1	0	0	0	0	0	0
	Darker	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	△	↓						↓						↓					
	▽	↓						↓						↓					
	Brighter	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0
	▽	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0
	Green	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
Gray Scale Of Blue	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	0	0	0	0	0	0	0	0	0	0	0	1
	Darker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	△	↓						↓						↓					
	▽	↓						↓						↓					
	Brighter	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1
	▽	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
Gray Scale Of White & Black	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1
	Darker	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0
	△	↓						↓						↓					
	▽	↓						↓						↓					
	Brighter	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	0	1
	▽	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

9.0 POWER SEQUENCE

To prevent a latch-up or DC operation of the LCD module, the power on/off sequence shall be as shown in below



- 0 < T1 ≤ 10 ms
- 0 < T2 ≤ 50 ms
- 200 ms ≤ T3
- 200 ms ≤ T4
- 0 ≤ T5 ≤ 50ms
- 0 ≤ T6 ≤ 10ms
- 150ms ≤ T7

Notes:

1. When the power supply VDD is 0V, Keep the level of input signals on the low or keep high impedance.
2. Do not keep the interface signal high impedance when power is on.
3. Back Light must be turn on after power for logic and interface signal are valid.

10.0 MECHANICAL CHARACTERISTICS

10.1 Dimensional Requirements

FIGURE 5, 6 shown in appendix shows mechanical outlines for the model.

Parameter	Specification	Unit
Active area	193.92 (H) × 116.35 (V)	mm
Number of pixels	1280(H) × 768(V)	pixels
	(1 pixel = R + G + B dots)	
Pixel pitch	0.1515(H) × 0.1515(V)	mm
Pixel arrangement	RGB Vertical stripe	
Display colors	262,144	colors
Display mode	Normally Black	
Dimensional outline	206.6±0.3(W) × 133.0±0.3(V) × 5.25 (D/Max)	mm
Weight	130 (Typ.)	g
Back-light	SMD LED (36ea) Array	

10.2 Mounting

See FIGURE 5. (shown in Appendix)

10.3 Glare and Polarizer Hardness.

The surface of the LCD has an glare coating and a coating to reduce scratching.

10.4 Light Leakage

There shall not be visible light from the back-lighting system around the edges of the screen as seen from a distance 50 cm from the screen with an overhead light level of 150lux. The manufacture shall furnish limit samples of the panel showing the light leakage acceptable.

11.0 Mechanical Drawing

Figure 6. TFT-LCD Module Outline Dimension (Front View)

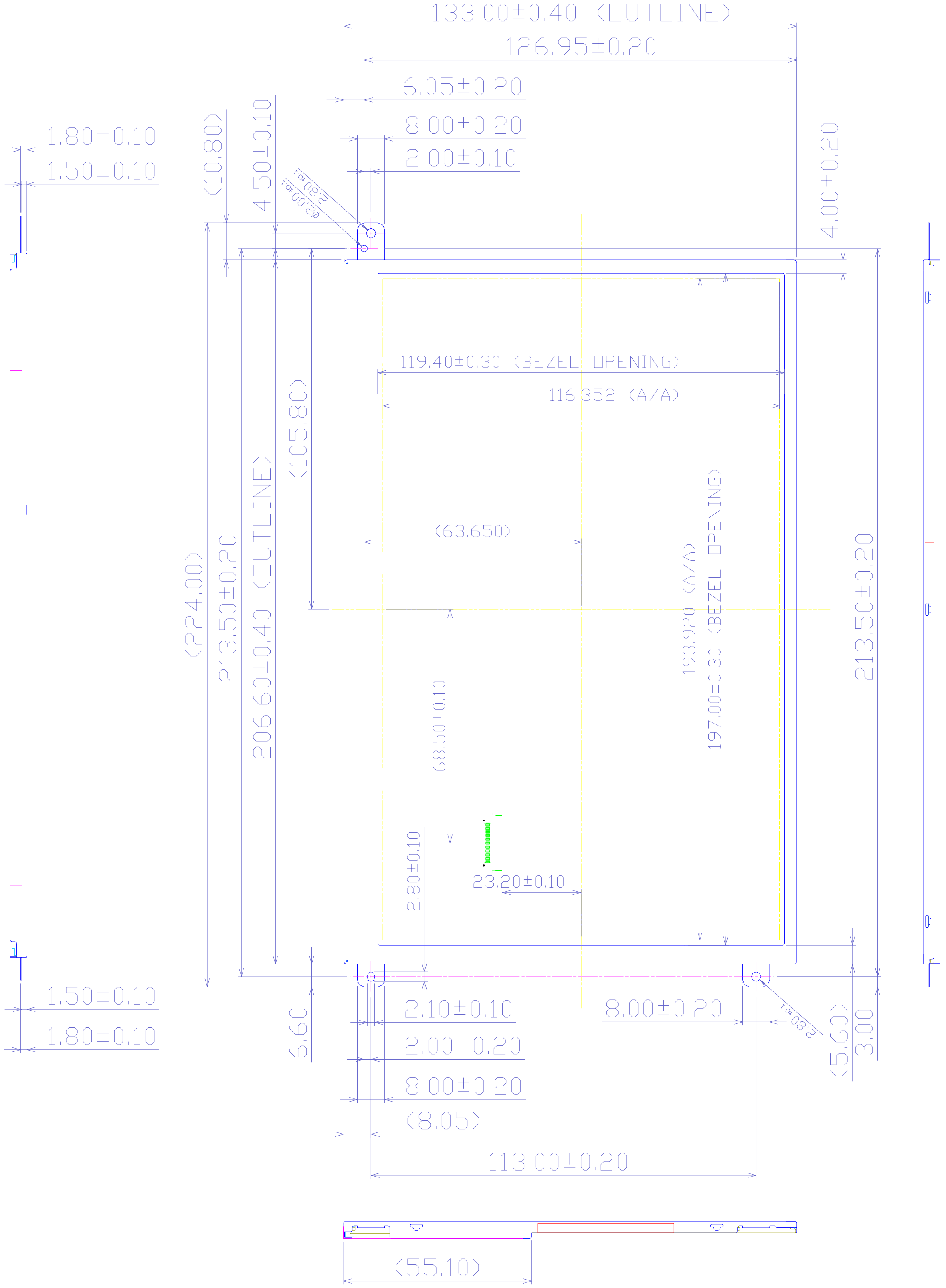
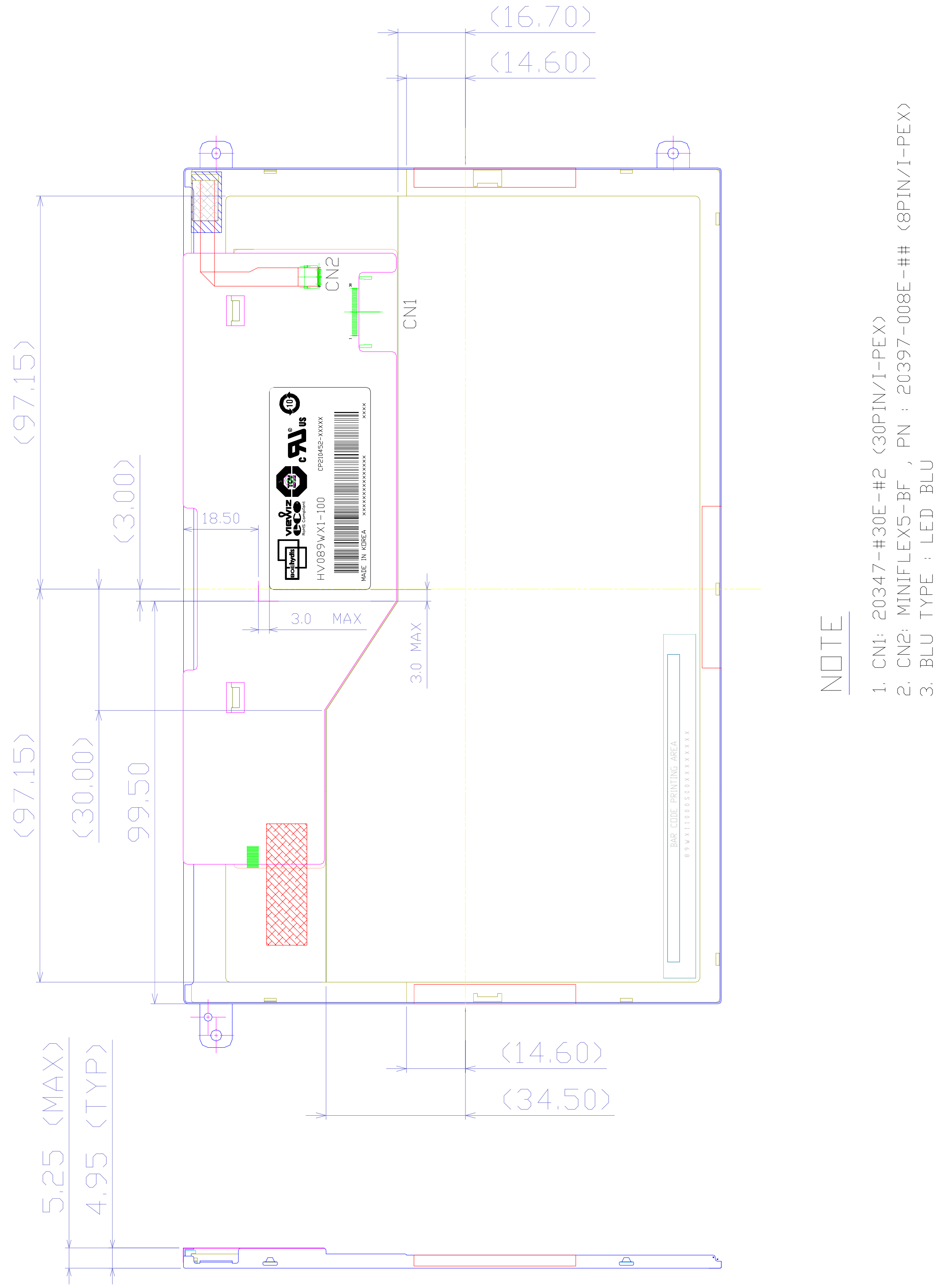


Figure 7. TFT-LCD Module Outline Dimensions (Rear view)



12.0 RELIABLITY TEST

The Reliability test items and its conditions are shown in below.

<Table 12. Reliability Test>

No	Test Items	Conditions
1	High temperature storage test	Ta = 60 °C, 240 hrs
2	Low temperature storage test	Ta = -20 °C, 240 hrs
3	High temperature & high humidity operation test	Ta = 50 ℃, 80%RH, 240hrs
4	High temperature operation test	Ta = 50 °C, 240 hrs
5	Low temperature operation test	Ta = 0 °C, 240 hrs
6	Thermal shock	Ta = -20 °C ↔ 60 °C (30 min), 100 cycle
7	Vibration test (non-operating)	Frequency : 10~500Hz Gravity/AMP : 1.5G Period : X,Y,Z 30min
8	Shock test (non-operating)	Gravity : 220G Pulse width : 2ms, half sine wave ±X, ±Y, ±Z Once for each direction
9	Electro-Static Discharge Test (non-operating)	Air : 150pF, 330ohm, 15KV Contact : 150pF, 330ohm, 8KV

13.0 HANDLING & CAUTIONS

13.1 Cautions when taking out the module

- Pick the pouch only, when taking out module from a shipping package.

13.2 Cautions for handling the module

- As the electrostatic discharges may break the LCD module, handle the LCD module with care. Peel a protection sheet off from the LCD panel surface as slowly as possible.
- As the LCD panel and backlight element are made from fragile glass material, impulse and pressure to the LCD module should be avoided.
- As the surface of the polarizer is very soft and easily scratched, use a soft dry cloth without chemicals for cleaning.
- Do not pull the interface connector in or out while the LCD module is operating.
- Put the module display side down on a flat horizontal plane.
- Handle connectors and cables with care.

13.3 Cautions for the operation

- When the module is operating, do not lose MCLK, DE signals. If any one of these signals were lost, the LCD panel would be damaged.
- Obey the supply voltage sequence. If wrong sequence were applied, the module would be damaged.

13.4 Cautions for the atmosphere

- Dewdrop atmosphere should be avoided.
- Do not store and/or operate the LCD module in a high temperature and/or humidity atmosphere. Storage in an electro-conductive polymer-packing pouch and under relatively low temperature atmosphere is recommended.

13.5 Cautions for the module characteristics

- Do not apply fixed pattern data signal to the LCD module at product aging.
- Applying fixed pattern for a long time may cause image sticking.

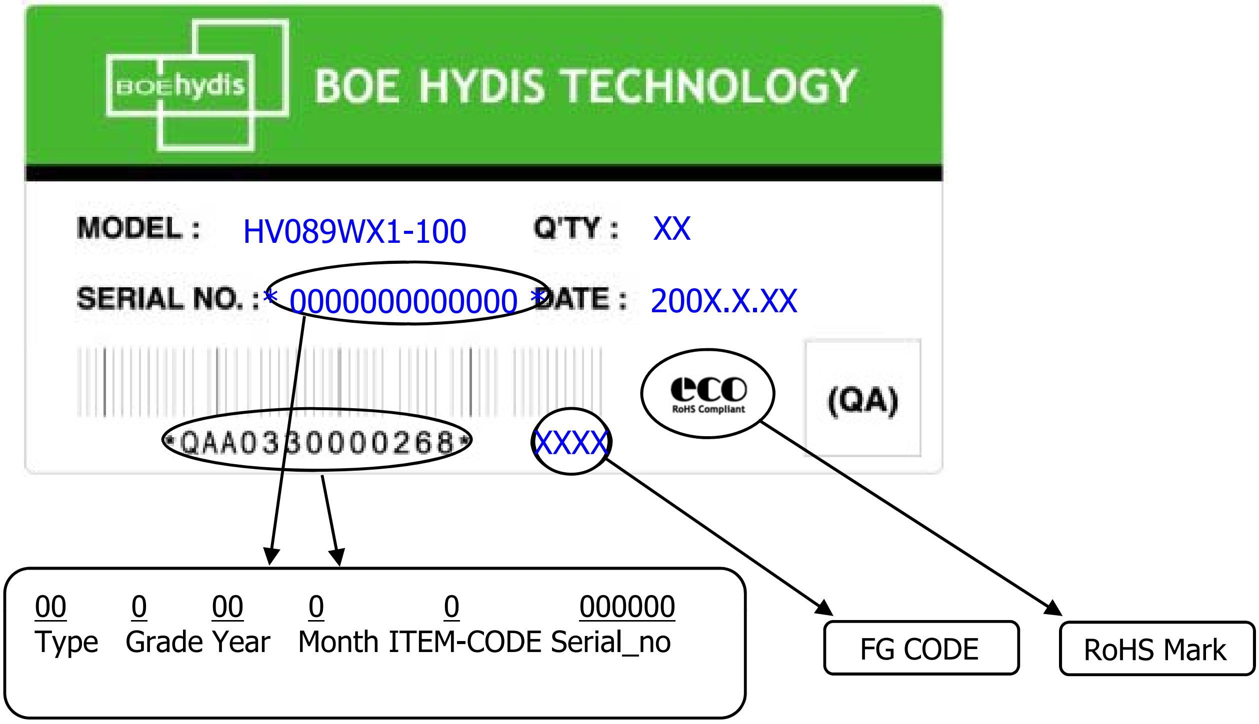
13.6 Other cautions

- Do not disassemble and/or re-assemble LCD module.
- Do not re-adjust variable resistor or switch etc.
- When returning the module for repair or etc, please pack the module not to be broken. We recommend using the original shipping packages.

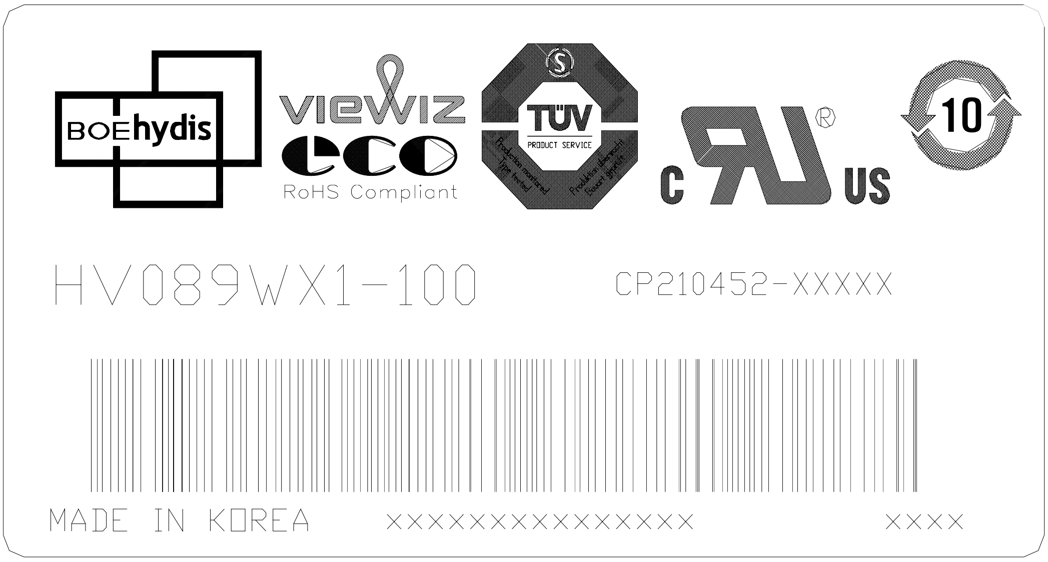
14.0 Environment & Safety

14.1 Packing Label

Label Size: 108 mm (L) × 56 mm (W)
Contents
Model: HV089WX1-100
Q`ty: Module Q`ty in one box
Serial No.: Box Serial No. See next figure for detail description.
Date: Packing Date
FG Code: FG Code of Product



14.3 Product Label



BOE HYDIS Barcode

1		2	3	4	5	6			7					
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

No 1. Control Number

No 2. Rank / Grade

No 3. Line Classification
(BOE HYDIS : H, LCM : L, BOE OT : A/B/C)

No 4. Year (7 : 2007, 8 : 2008, …)

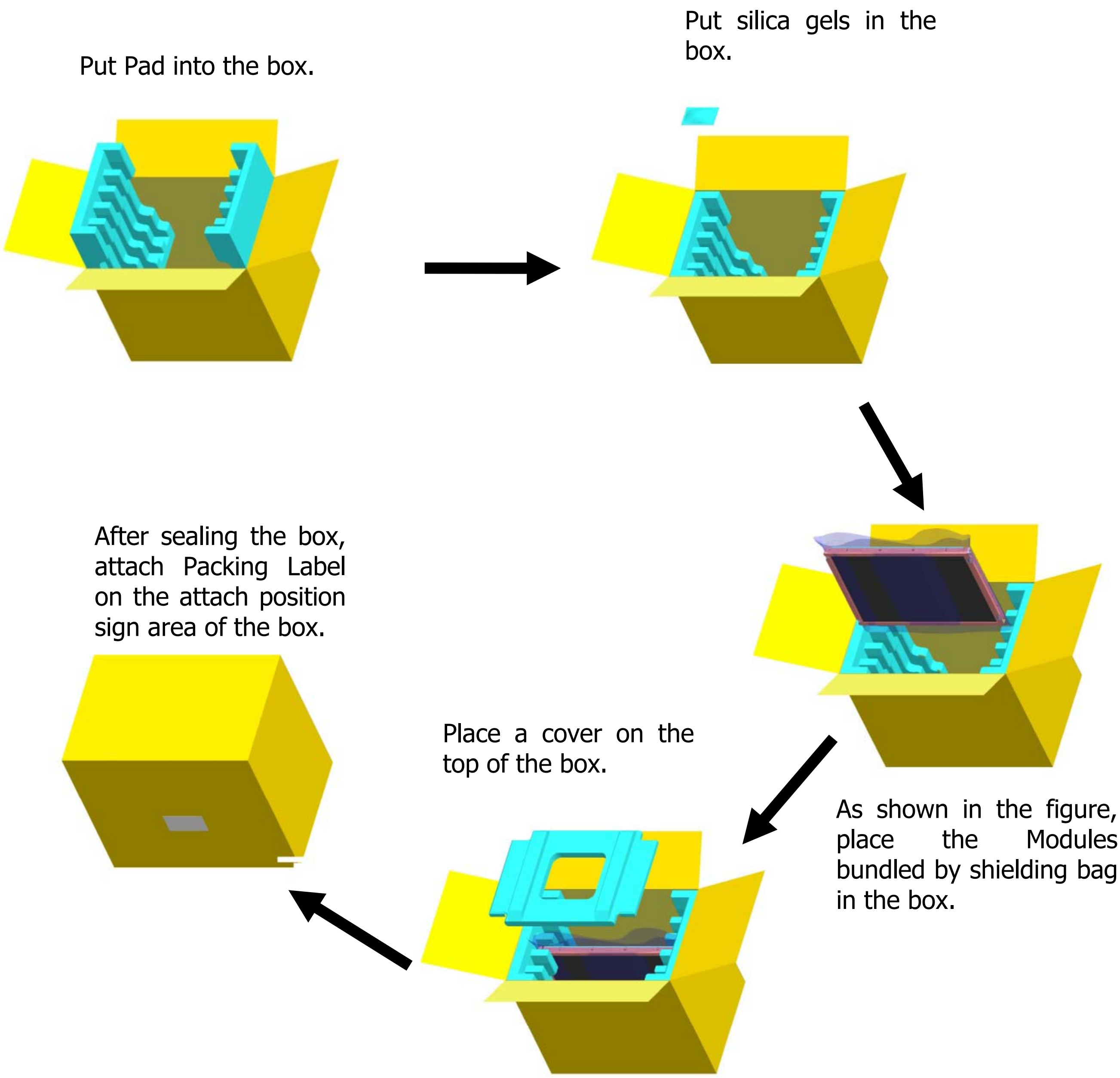
No 5. Month (1, 2, 3,…, 9, X, Y, Z)

No 6. Product name

No 7. Serial Number

15.0 PACKING INFORMATION

15.1 Packing Order



Notes

- Box Dimension : 261mm(W) X 349mm(D) X 311mm(H)
- Package Quantity in one Box : 20pcs