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TITLE : HT101HD1-100

Product Specification

Rev. O

HYDIS Technologies

REVISION HISTORY

REV.	ECN NO.	DESCRIPTION OF CHANGES	DATE	PREPARED
O		▪Initial release	09.05.11	B,P.CHOI

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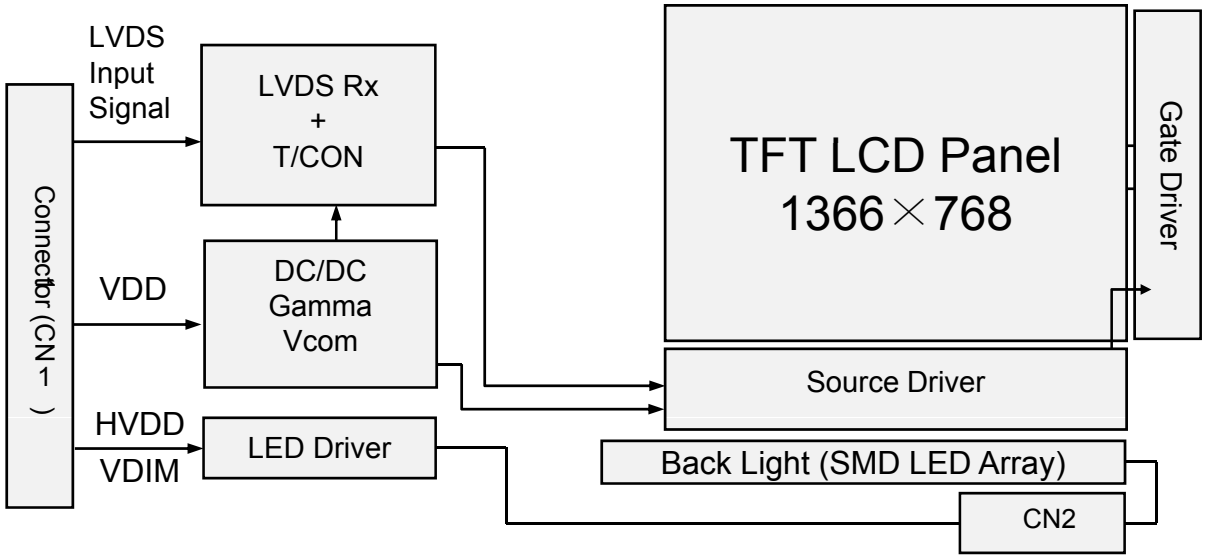
1.0 GENERAL DESCRIPTION

1.1 Introduction

HT101HD1-100 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 10.1 inch diagonally measured active area with HD resolutions (1366 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 Logic Power Supply
- 12V Back-light Power Supply
- 1 Channel LVDS Interface
- SMD LED (30 EA) Array (Bottom Side/Horizontal Direction)
- 262,144 Colors
- Data Enable Signal Mode
- Side Mounting Frame
- Green Product (RoHS)

1.3 Application

- Netbook PC (Wide type)

1.4 General Specifications

Parameter	Specification	Unit	Remarks
Active area	222.317 (H) x 124.992 (V)	mm	
Number of pixels	1366(H) ×768(V)	pixels	
Pixel pitch	54.25 x 162.75	mm	
Pixel arrangement	RGB Vertical Stripe		
Display colors	262,144	colors	
Display mode	Normally White		
Outline dimension	235.0±0.5(H) ×143.0±0.5(V) ×5.2(Max.)	mm	
Weight	190(Max.)	g	
Back-light	SMD LED (30 EA) Array		

2.0 ABSOLUTE MAXIMUM RATINGS

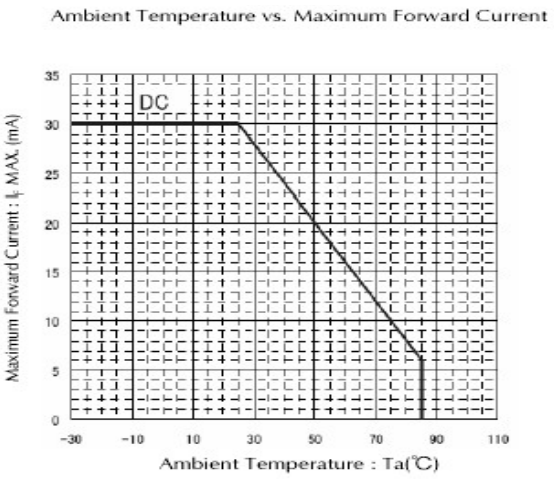
The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit.

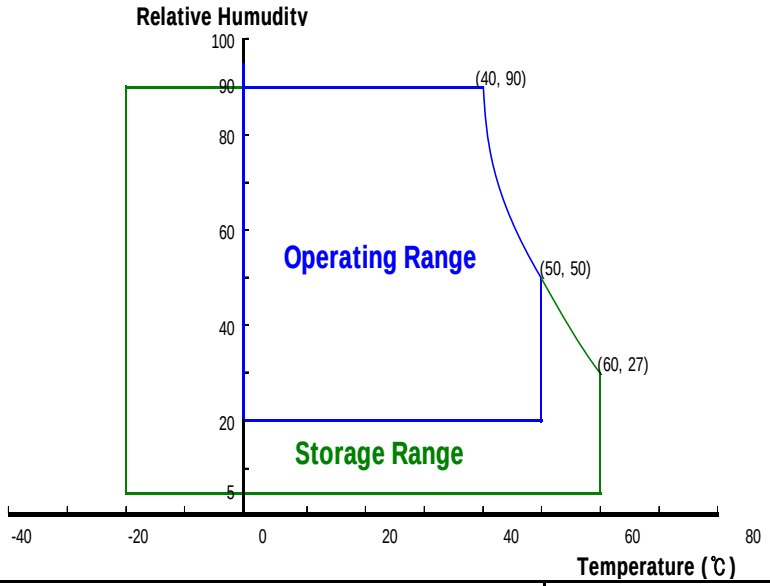
Ta=25+/-2°C

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	I_{LED}	-	25	mA	Note 1
Back-light LED Reverse Voltage	V_R	2.8	3.4	V	
Operating Temperature	T_{OP}	0	+50	℃	Note 1, Note 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.





3.0 ELECTRICAL SPECIFICATIONS

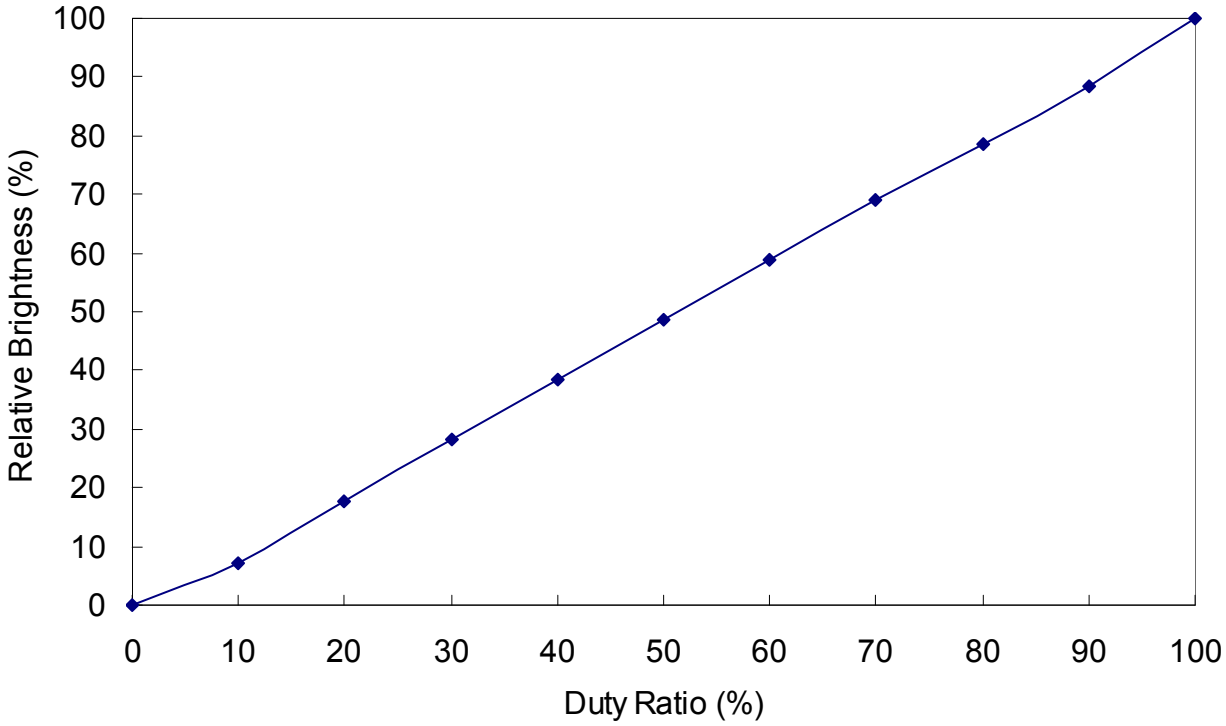
3.1 Electrical Specifications

< 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	-	mA	Note 1
Back-light Power Supply Voltage	HV_{DD}	7.0	12.0	20	V	Note 2
Back-light Power Supply Current	I_{HVDD}	-	181	212	mA	Note 2, 3
Power Consumption (EBL)	P_{EBL}	-	1.82	-	W	Note 1, 2, 3
LED Driver's Efficiency	η	-	84	-	%	Note 2, 3
Back-light PWM Frequency	F_{PWM}	200	320	350	Hz	
High Level PWM Signal Voltage	V_{PWMH}	2.1	3.3	5	V	
Low Level PWM Signal Voltage	V_{PWML}	-	0	0.4	V	
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}	-	3.2 /16.0	3.4 /17.0	V	Note 4
Back-light LED Current / Back-light LED Total Current	I_{LED} /I_{BL}	-	19.0 /114.0	20.9 /125.4	mA	Note 4
Life Time		10,000	-	-	Hrs	Based on LED
Power Consumption	P_D	-	1.1	-	W	Note 1
	P_{LED}	-	1.82	2.13	W	Note 4,5
	P_{BL}	-	2.17	2.54	W	Note 2, 3
	P_{total}	-	3.27	-	W	Note 1, 4

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 (30 EA)).

3.2 PWM Duty Ratio vs Brightness



Notes :

In case of duty ratio 0%, LED can't illuminate itself so this state is LED off.

In case of duty ratio 100%, the brightness of LED is maximum and the state is LED on.

4.0 OPTICAL SPECIFICATIONS

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 TOPCON BM-5A) 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 $\theta_{Ø=0}$ (=θ3) as the 3 o'clock direction (the "right"), $\theta_{Ø=90}$ (= θ12) as the 12 o'clock direction ("upward"), $\theta_{Ø=180}$ (= θ9) as the 9 o'clock direction ("left") and $\theta_{Ø=270}$(= θ6) as the 6 o'clock direction ("bottom"). While scanning θ and/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. V_{DD} 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	Remarks
Viewing Angle range	Horizontal	Θ_3	CR > 10	-	30	-	Deg.	Note 1
		Θ_9		-	30	-	Deg.	
	Vertical	Θ_{12}		-	10	-	Deg.	
		Θ_6		-	20	-	Deg.	
Luminance Contrast ratio		CR	Θ = 0°	-	400	-		Note 2
Luminance of White	5 Points	Y_w	Θ = 0°	170	200	-	cd/m^2	Note 4 Note 5
White Luminance uniformity	5 Points	ΔY5		-	-	-	%	
	13 Points	ΔY13		-	63	71		
White Chromaticity		W_x	Θ = 0°	0.273	0.313	0.353		Note 3
		W_y		0.289	0.329	0.369		
Reproduction of color	Red	R_x	Θ = 0°	0.526	0.556	0.586		
		R_y		0.315	0.345	0.375		
	Green	G_x		0.313	0.343	0.373		
		G_y		0.537	0.567	0.597		
	Blue	B_x		0.118	0.148	0.178		
		B_y		0.065	0.095	0.125		
Response Time		Total ($T_r + T_d$)	Ta= 25° C Θ = 0°	-	16	-	ms	Note 6
Cross Talk		CT	Θ = 0°	-	-	2.0	%	Note 7

Notes :

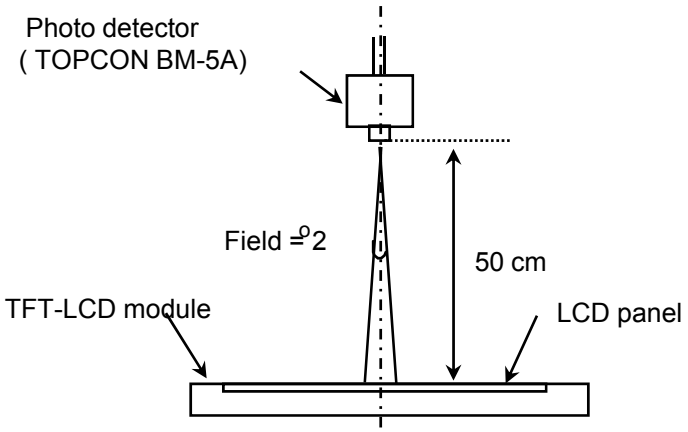
1. Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing angles are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface (see Figure1).

2. Contrast measurements shall be made at viewing angle of Θ= 0 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 Figure1). Luminance Contrast Ratio (CR) is defined mathematically as CR = Luminance when displaying a white raster / Luminance when displaying a black raster.

3. Reference only / Standard Front Surface Treatment Measured with green cover glass. 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.

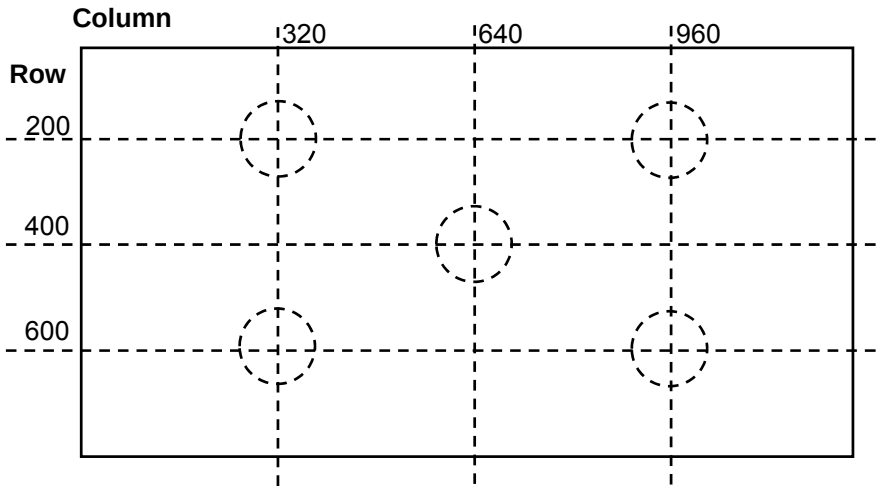
4.3 Optical Measurements

Figure 1. Measurement Set Up



Optical characteristics measurement setup

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

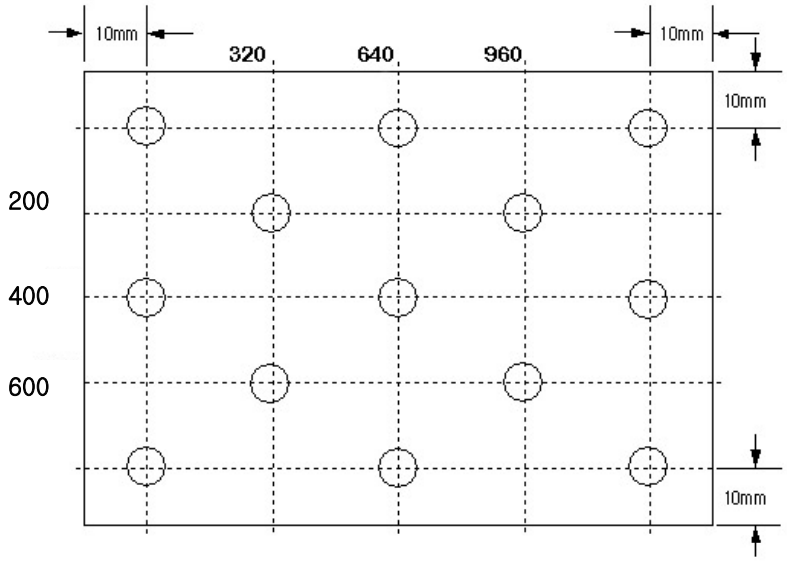


Note 4.

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)

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

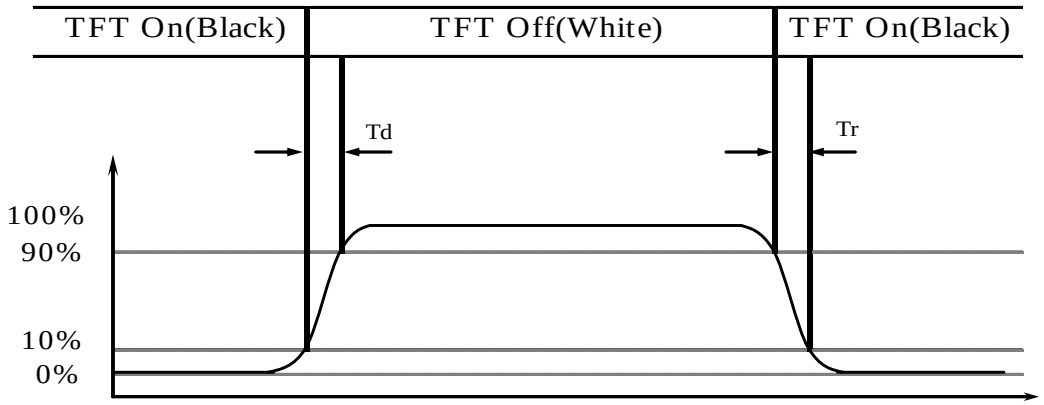
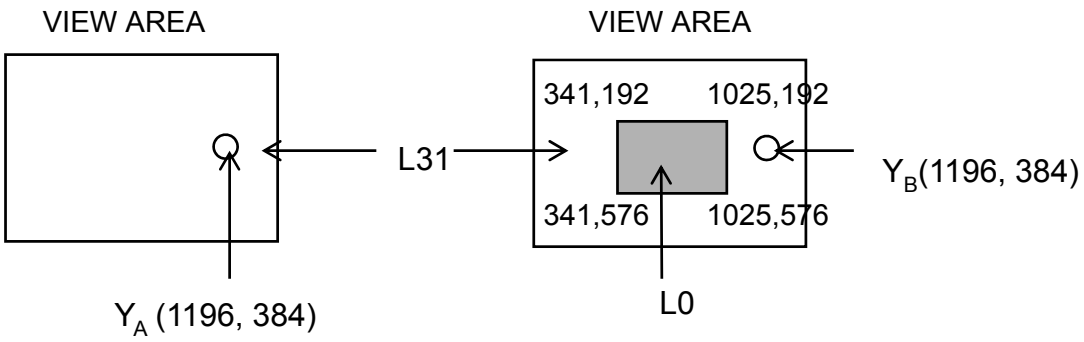


Figure 5. Cross Modulation Test Description



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

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 CONNECTIONS

5.1 Electrical Interface Connection

CN1 Interface Connector (20455-040E, Manufactured by I-PEX)

User side Connector (20453-040T,Manufacture by I-PEX)

Pin No.	Symbol	Function	Pin No.	Symbol	Function
1	NC	No Connection (Reserved for supplier)	21	NC	No Connection
2	AVDD	Power Supply, 3.3V (typical)	22	GND	Ground
3	AVDD	Power Supply, 3.3V (typical)	23	NC	No Connection
4	DVDD	DDC 3.3V power	24	NC	No Connection
5	NC	No Connect	25	GND	Ground
6	SCL	DDC Clock	26	NC	No Connection
7	SDA	DDC Data	27	NC	No Connection
8	Rin0-	- LVDS differential data input (R0-R5, G0)	28	GND	Ground
9	Rn0+	+ LVDS differential data input (R0-R5, G0)	29	NC	No Connection
10	GND	Ground	30	NC	No Connection
11	Rin1-	- LVDS differential data input (G1-G5, B0-B1)	31	VBL-	LED Ground
12	Rn1+	+ LVDS differential data input (G1-G5, B0-B1)	32	VBL-	LED Ground
13	GND	Ground	33	VBL-	LED Ground
14	Rin2-	- LVDS differential data input (B2-B5,HS,VS, DE)	34	NC	No Connection
15	Rn2+	+ LVDS differential data input (B2-B5,HS,VS, DE)	35	BLIM	PWM for luminance control (200~1KHz, 3.3V, 10~100%)
16	GND	Ground	36	BL_Enable	BL On/Off (On: 2.0~3.3V, Off: 0~0.5V)
17	ClkIN-	- LVDS differential clock input	37	NC	No Connection
18	ClkIN+	+ LVDS differential clock input	38	VBL+	LED Power Supply 6V-20V
19	GND	Ground	39	VBL+	LED Power Supply 6V-20V
20	NC	No Connection	40	VBL+	LED Power Supply 6V-20V

5.2 LVDS Interface

LVDS Transmitter: THC63LVDM83A

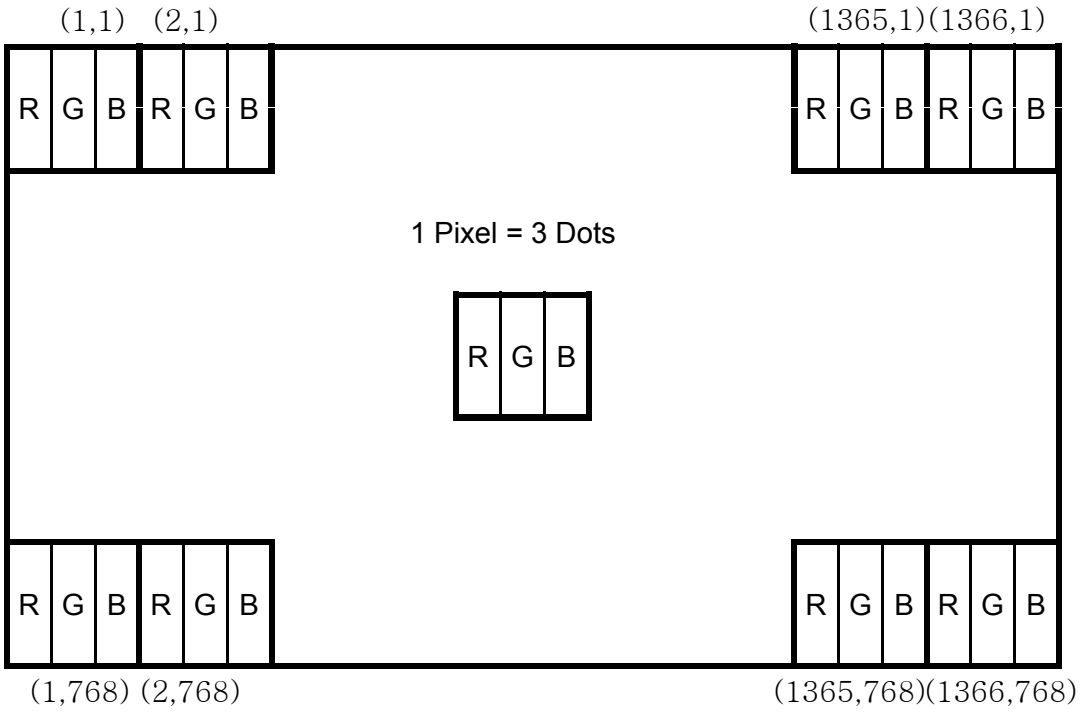
Input signal	Transmitter		Interface		20455-040E-0	Remark
	Pin No	Pin No	System (Tx)	TFT-LCD (Rx)	Pin No.	
R0	51	48 47	OUT0- OUT0+	IN0- IN0+	8 9	
R1	52					
R2	54					
R3	55					
R4	56					
R5	3					
G0	4					
G1	6	46 45	OUT1- OUT1+	IN1- IN1+	11 12	
G2	7					
G3	11					
G4	12					
G5	14					
B0	15					
B1	19					
B2	20	42 41	OUT2- OUT2+	IN2- IN2+	14 15	
B3	22					
B4	23					
B5	24					
HSYNC	27					
VSYNC	28					
DE	30					
MCLK	31	40	CLKOUT-	CLKIN-	17	
		39	CLKOUT+	CLKIN+	18	

5.3 Back-light Interface

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

Pin No.	Symbol	Function	Remark
1	Anode	LED Anode Power Supply	LED Anode Power Supply
2	NC	Non-Connection	
3	Cathode1	LED Cathode Power Supply	
4	Cathode2	LED Cathode Power Supply	
5	Cathode3	LED Cathode Power Supply	-
6	Cathode4	LED Cathode Power Supply	LED Cathode Power Supply
7	Cathode5	LED Cathode Power Supply	
8	Cathode6	LED Cathode Power Supply	

5.4 Data Input Format



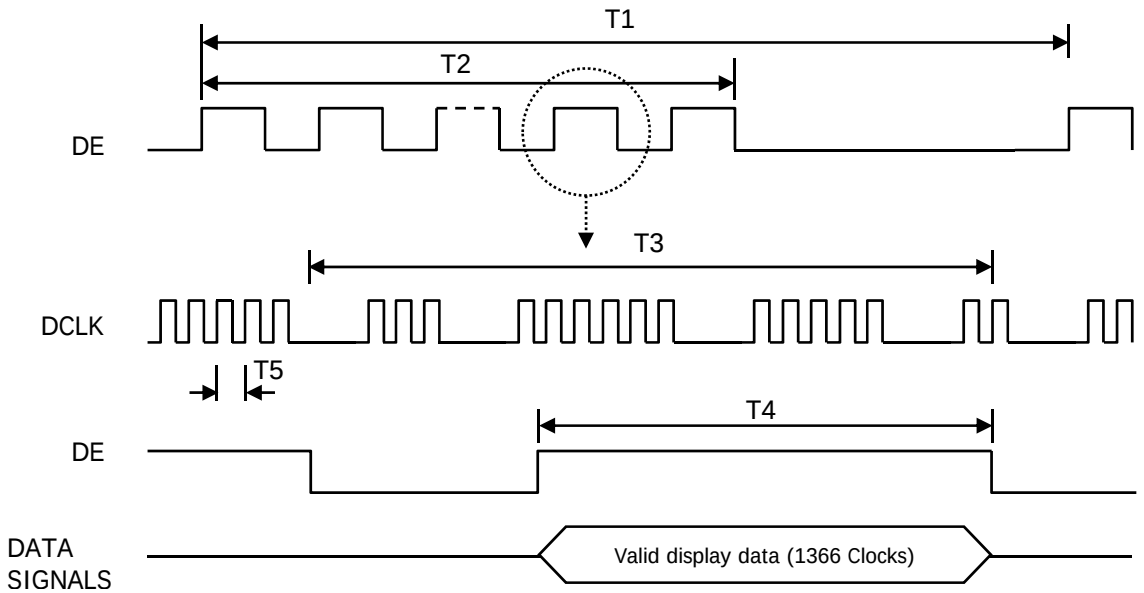
6.0. SIGNAL TIMING SPECIFICATIONS

6.1 The 10.1" HD LCM is operated by the only DE (Data enable) mode (LVDS Transmitter Input)

Item	Symbol	Min.	Typ.	Max.	Unit
Frame Period	T1	779	790	-	Lines
Vertical Display Period	T2	-	768	-	Lines
One line Scanning Period	T3	1470	1526	-	Clocks
Horizontal Display Period	T4	-	1366	-	Clocks
Clock Frequency	1/T5	-	72.33	80	MHz

7.0 SIGNAL TIMING WAVEFORMS

7.1 Timing Waveforms of Interface Signal

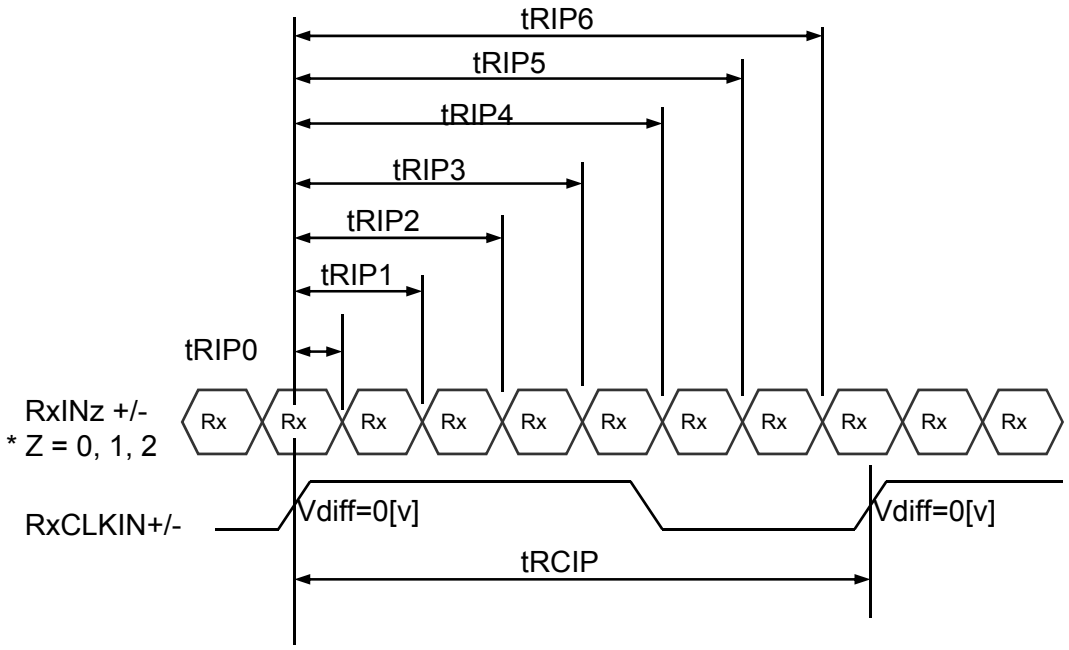


7.2 LVDS Rx Interface Timing Parameter

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	13.82	-	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	



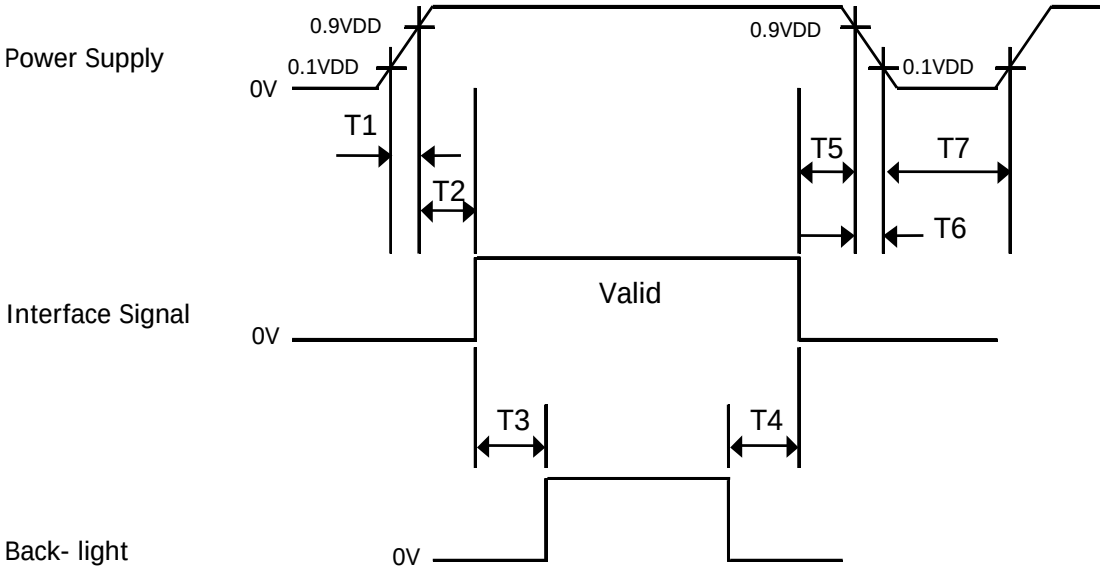
8.0 INPUT SIGNALS, BASIC DISPLAY COLORS & GRAY SCALE OF COLORS

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



- T1 ≤ 10 ms
- 0 ≤ T2 ≤ 50 ms
- 200 ms ≤ T3
- 200 ms ≤ T4
- 0 ≤ T5 ≤ 50 ms
- 0 ≤ T6 ≤ 10ms
- 500ms ≤ 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 6 & 7 (located in 11.0) shows mechanical outlines for the model

Parameter	Specification	Unit
Active Area	222.317 (H) x 124.992 (V)	mm
Number of pixels	1366(H) X 768(V) (1 pixel = R + G + B dots)	
Pixel pitch	54.25 x 162.75	
Pixel arrangement	RGB Vertical stripe	
Display colors	262,144	
Display mode	Normally White	
Outline dimension	235.0±0.5(H) ×143.0±0.5(V) ×5.2(Max.)	mm
Weight	190 (Max.)	g
Back-light	SMD LED (30 EA) Array	

10.2 Mounting

See Figure 6 & 7 & 8. (shown in 11.0)

Parameter	Specification	Unit
Torque of side mounting screw	2.5 (Max.)	Kgf.cm

10.3 Anti-Glare and Polarizer Hardness.

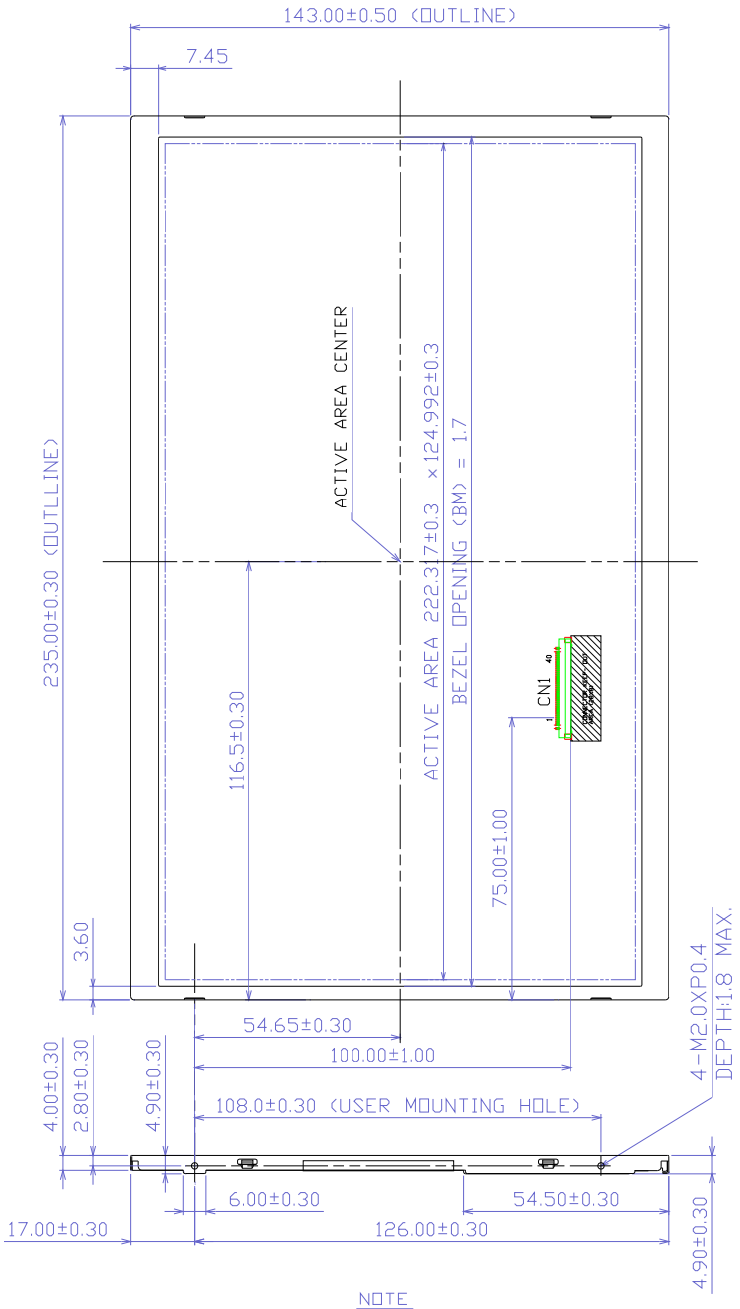
The surface of the LCD has an anti-glare coating to minimize reflection and a coating to reduce scratching.

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 50cm 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

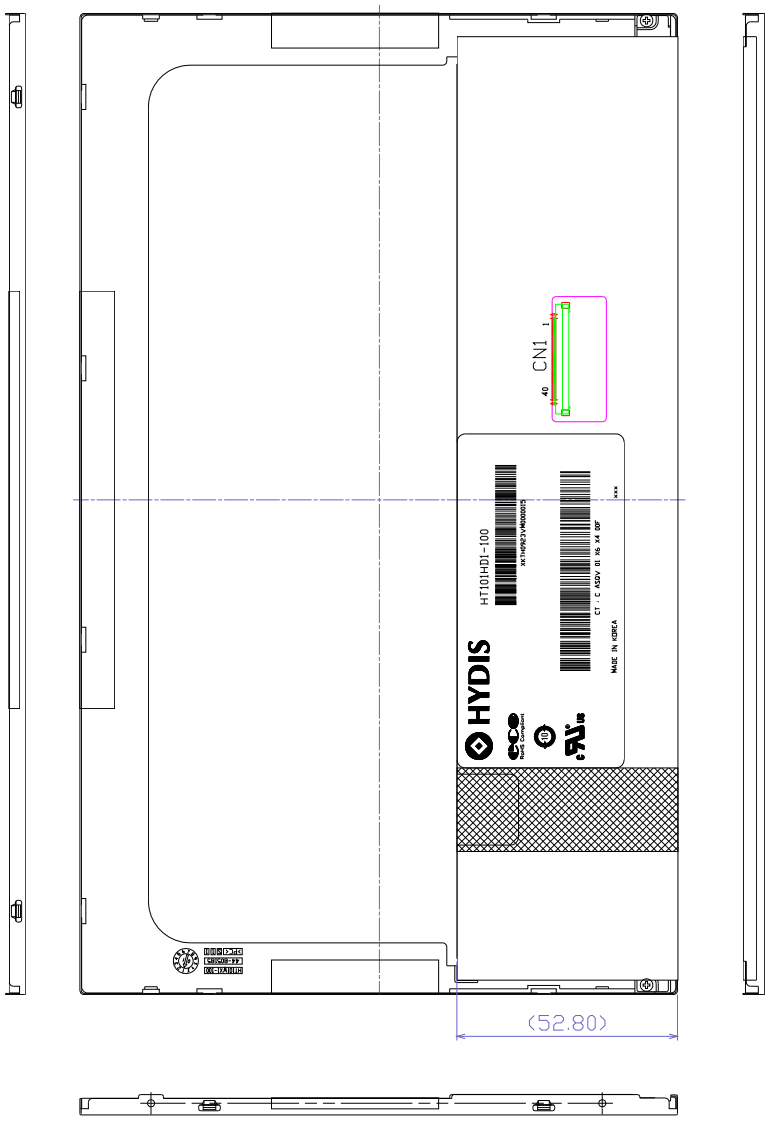
Figure 6. TFT-LCD Module Outline Dimension (Front View)



NOTE

1. LIFE TIME : MIN 12,000hr (I_{LED} =20.0mA, 25°C)
2. B/L UNIT TYPE : LED B/L UNIT
3. I/F CONNECTOR SPEC. : CN1: 20455-040E-#2 (40PIN/I-PEX)
4. GENERAL TOLERANCE: ±0.5

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 Item	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 back - light element are made from fragile glass (epoxy) 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 is applied, the module would be damaged.

13.4 Cautions for the atmosphere

- Dew drop 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 Cautions for the digitizer assembly

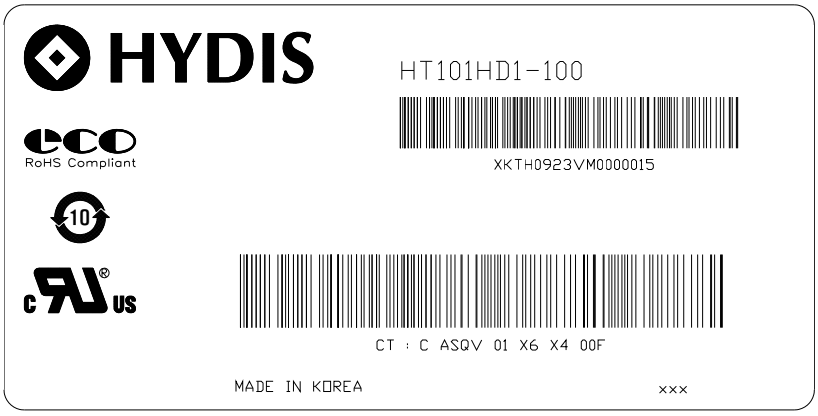
- When assembling FPC connector, do not flip connector past 90° due to possible damage to connector.
- When positioning digitizer underneath driver IC, do not lift driver IC past 90° due to possible damage to drive IC pattern.
- Please be warned that during assembly of digitizer, the opening or closing of FPC will result in possible electrostatic discharge damage to the LED

13.7 Other cautions

- 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 to use the original shipping packages.

14.0 LABELS

14.1 Product Label



HYDIS Barcode

1	2	3	4	5	6	7
X X	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
(HYDIS: H, LCM : L, OT : A/B/C)

No 4. Year (5 : 2005, 6 : 2006, …)

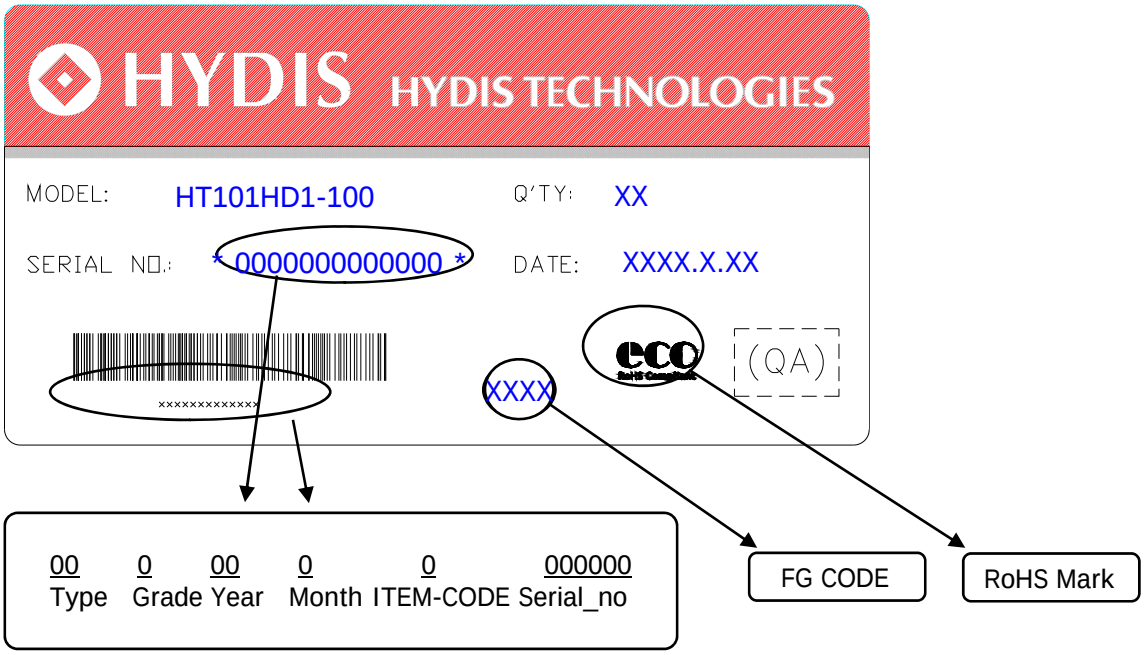
No 5. Month (1, 2, 3,…, 9, X, Y, Z)

No 6. FG Code

No 7. Serial Number

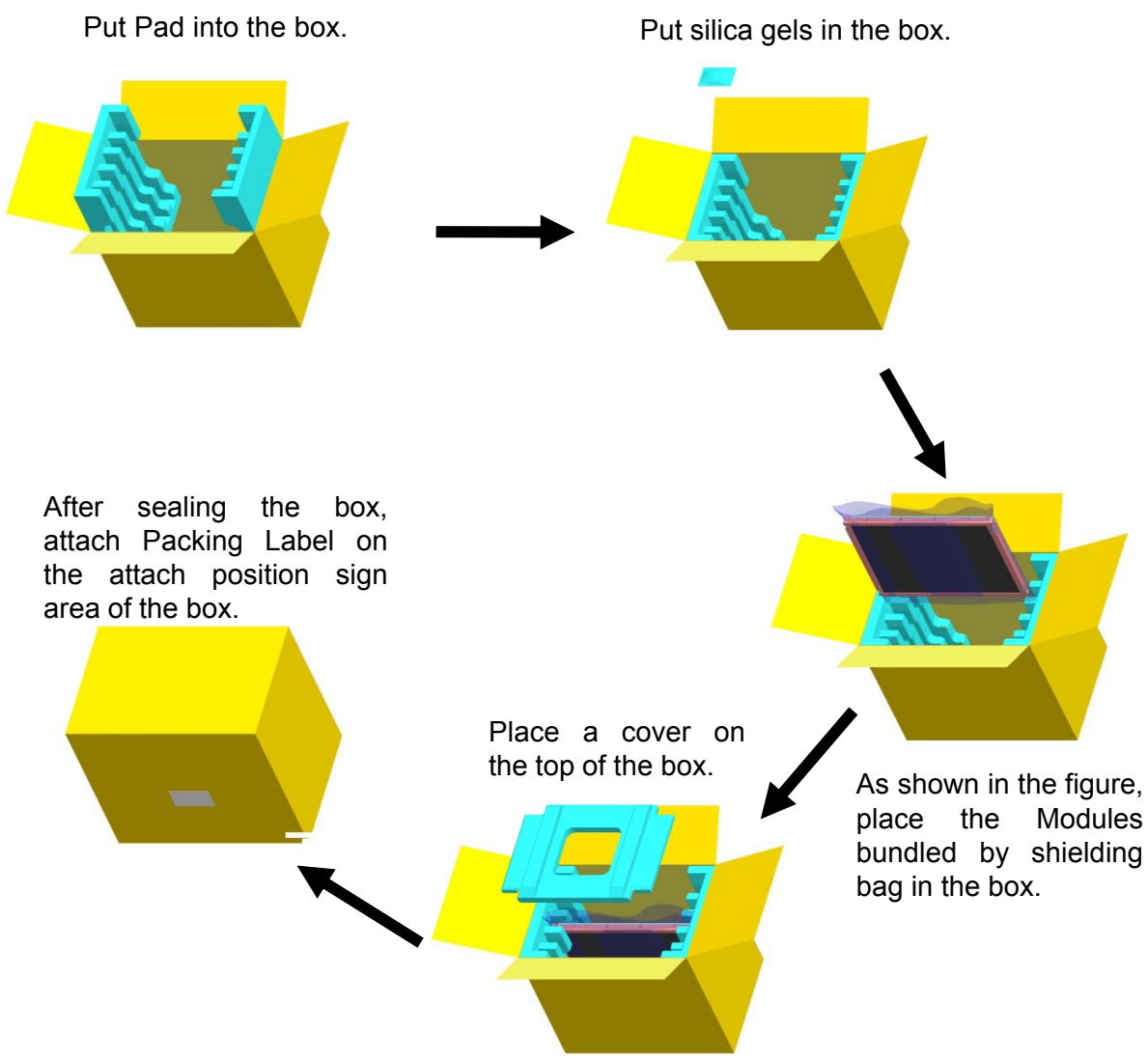
14.2 Packing Label

Label Size: 108 mm (L) × 56 mm (W)
Contents
Model: HT101HD1-100
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



15.0 PACKING INFORMATION

15.1 Packing order



15.2 Notes

- Box Dimension : 261 x 349 x 270
- Package Quantity in one Box : 10pcs

16.0 EDID Table

EDID chip is 24LC024 (Microchip) or equivalent .

00	Header	00	0		EDID Header
01		FF	255		
02		FF	255		
03		FF	255		
04		FF	255		
05		FF	255		
06		FF	255		
07		00	0		
08	ID Manufacturer Name	09	9		ID
09		E5	229		
0A	ID Product Code	00	0		CODE
0B		40	64		
0C	32-bit serial No.	00	0		
0D		00	0		
0E		00	0		
0F		00	0		
10	Week of manufacture	0	0	0	
11	Year of Manufacture	13	19	2009	Manufactured in 2009
12	EDID Structure Ver.	01	1	1	EDID Ver 1.0
13	EDID revision #	03	3	3	EDID Rev. 0.3
14	Video input definition	80	128		
15	Max H image size	16	22	22	22 cm (Approx)
16	Max V image size	0C	12	12	12 cm (Approx)
17	Display Gamma	78	120	2.2	Gamma curve = 2.2
18	Feature support	EA	234		RGB display, Preferred Timming mode
19	Red/Green low bits	F2	242		Red / Green Low Bits
1A	Blue/White low bits	F0	240		Blue / White Low Bits
1B	Red x high bits	96	150		Rx
1C	Red y high bits	58	88		Ry
1D	Green x high bits	4F	79		Gx
1E	Green y high bits	8B	139		Gy
1F	Blue x high bits	26	38		Bx
20	BLue y high bits	25	37		By
21	White x high bits	50	80		Wx
22	White y high bits	54	84		Wx

Address (HEX)	Function	Hex	Dec	values.	Notes
23	Established timing 1	21	33		
24	Established timing 2	08	8		
25	Established timing 3	00	0		
26	Standard timing #1	01	1		Not Used
27		01	1		
28	Standard timing #2	01	1		Not Used
29		01	1		
2A	Standard timing #3	01	1		Not Used
2B		01	1		
2C	Standard timing #4	01	1		Not Used
2D		01	1		
2E	Standard timing #5	01	1		Not Used
2F		01	1		
30	Standard timing #6	01	1		Not Used
31		01	1		
32	Standard timing #7	01	1		Not Used
33		01	1		
34	Standard timing #8	01	1		Not Used
35		01	1		
36	Detailed timing/monitor descriptor #1 (60Hz)	41	65	72.3300	72.33MHz Main clock
37		1C	28		
38		56	86	1366	Hor Active = 1366
39		A0	160	160	Hor Blanking = 160
3A		50	80		4 bits of Hor. Active + 4 bits of Hor. Blanking
3B		00	0	768	Ver Active = 768
3C		16	22	22	Ver Blanking = 22
3D		30	48		4 bits of Ver. Active + 4 bits of Ver. Blanking
3E		30	48	48	Hor Sync Offset = 48
3F		20	32	32	H Sync Pulse Width = 32
40		35	53	3	V sync Offset = 3 line
41		00	0	5	V Sync Pulse width : 5 line
42		DE	222	222	Horizontal Image Size = 222 mm (Low 8 bits)
43		7D	125	125	Vertical Image Size = 125 mm (Low 8 bits)
44		00	0		4 bits of Hor Image Size + 4 bits of Ver Image Size
45		00	0	0	Hor Border (pixels)
46		00	0	0	Vertical Border (Lines)
47		18	24		

Address (HEX)	Function	Hex	Dec	values.	Notes
48	Detailed timing/monitor descriptor #2	8C	140	60.2800	
49		17	23		
4A		56	86	1366	
4B		A0	160	160	
4C		50	80		
4D		00	0	768	
4E		16	22	22	
4F		30	48		
50		30	48	48	
51		20	32	32	
52		35	53	3	
53		00	0	5	
54		DE	222	222	
55		7D	125	125	
56		00	0		
57		00	0	0	
58		00	0	0	
59		18	24		
5A	Detailed timing/monitor descriptor #3	00	0		
5B		00	0		
5C		00	0		
5D		FE	254		
5E		00	0		
5F		48	72	H	
60		59	89	Y	
61		44	68	D	
62		49	73	I	
63		53	83	S	
64		0A	10		
65		20	32		
66		20	32		
67		20	32		
68		20	32		
69		20	32		
6A		20	32		
6B		20	32		

Address (HEX)	Function	Hex	Dec	values.	Notes
6C	Detailed timing/monitor descriptor #4	00	0		Product Name Tag (ASCII)
6D		00	0		
6E		00	0		
6F		FE	254		
70		00	0		
71		48	72	H	Model name : HT101HD1-100
72		54	84	T	
73		31	49	1	
74		30	48	0	
75		31	49	1	
76		48	72	H	
77		44	68	D	
78		31	49	1	
79		2D	45	-	
7A		31	49	1	
7B		30	48	0	
7C		30	48	0	
7D		0A	10		
7E	Extension flag	00	0		
7F	Checksum	C9	201		