



TO : HP

DATE : Jan. 11, 2012.

SAMSUNG TFT-LCD

MODEL NO : LTN140AT26-H02

NOTE : Extension code [-H02]
→ LTN140AT26-H
Surface type [**Glare**]

Any Modification of Spec is not allowed without SEC' permission.

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GENERAL DESCRIPTION

DESCRIPTION

LTN140AT26-H02 is a color active matrix TFT (Thin Film Transistor) liquid crystal display (LCD) that uses amorphous silicon TFT as switching devices. This model is composed of a TFT LCD panel, a driver circuit and a backlight system. The resolution of a 14.0" contains 1366 x 768 pixels and can display up to 262,144 colors. 6 O'clock direction is the Optimum viewing angle.

FEATURES

- High contrast ratio
- HD (1366 x 768 pixels) resolution
- Low power consumption
- Fast response time
- LED Back Light with embedded LED Driver
- DE (Data enable) only mode
- 3.3V LVDS Interface
- Onboard EEDID chip
- Green product (RoHS compliant)
- HP EDID Ver 3.1 compliance

APPLICATIONS

- Notebook PC
- If the usage of this product is not for PC application, but for others, please contact SEC

GENERAL INFORMATION

Item	Specification	Unit	Note
Display area	309.399 (H) x 173.952 (V) (14.0"diagonal)	mm	
Driver element	a-Si TFT active matrix		
Display colors	262,144		
Number of pixel	1366 x 768	pixel	16 : 9
Pixel arrangement	RGB vertical stripe		
Pixel pitch	0.2265(H) x 0.2265(V) (TYP.)	mm	
Display Mode	Normally white		
Surface treatment	Haze 0, Hardness 3H		Glare

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Mechanical Information

Item		Min.	Typ.	Max.	Unit	Note
Module size	Horizontal (H)	323.0	323.5	324.0	mm	(1)
	Vertical (V)	191.5	192.0	192.5	mm	
	Depth (D)	-	-	5.2	mm	
Weight		-	-	350	g	

Note (1) Measurement condition of outline dimension

. Equipment : Vernier Calipers / Height gauge

. Push Force : 500g · f (minimum)

1. ABSOLUTE MAXIMUM RATINGS

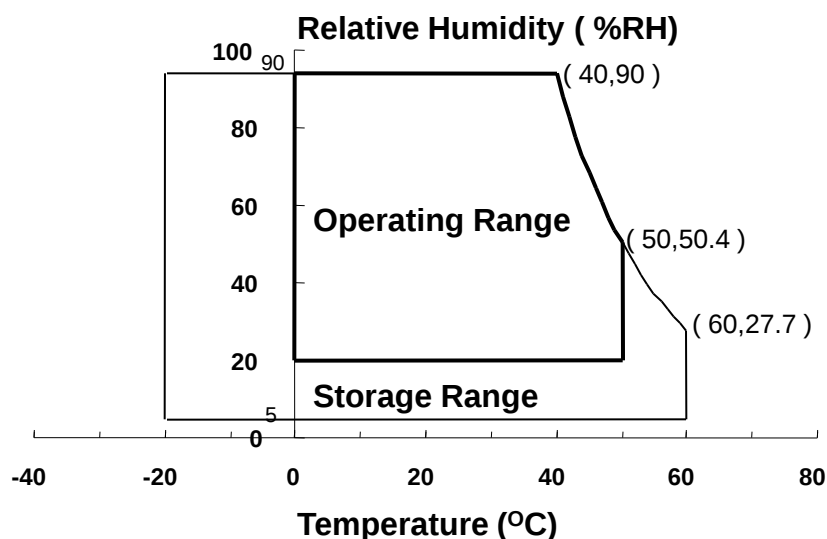
1.1 ENVIRONMENTAL ABSOLUTE RATINGS

Item	Symbol	Min.	Max.	Unit	Note
Storage temperate	TSTG	-20	60	°C	(1)
Operating temperate (Temperature of glass surface)	TOPR	0	50	°C	(1)
Shock (non-operating)	Snop	-	240	G	(2),(4)
Vibration (non-operating)	Vnop	-	2.41	G	(3),(4)

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

95 % RH Max. ($40^{\circ}\text{C} \geq T_a$)

Maximum wet - bulb temperature at 39°C or less. ($T_a > 40^{\circ}\text{C}$) No condensation



(2) 2ms, half sine wave, one time for $\pm X$, $\pm Y$, $\pm Z$.

(3) 5 - 500 Hz, random vibration, 30min for X, Y, Z.

(4) At testing Vibration and Shock, the fixture in holding the Module to be tested have to be hard and rigid enough so that the Module would not be twisted or bent by the fixture.

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1.2 ELECTRICAL ABSOLUTE RATINGS

(1) TFT LCD MODULE

$V_{DD}=3.3V$, $V_{SS}=GND=0V$

Item	Symbol	Min.	Max.	Unit	Note
Power Supply Voltage	V_{DD}	$V_{DD}-0.3$	$V_{DD}+0.3$	V	(1)
Logic Input Voltage	V_{DD}	$V_{DD}-0.3$	$V_{DD}+0.3$	V	(1)

Note (1) Within Ta (25 ± 2 °C)

2. OPTICAL CHARACTERISTICS

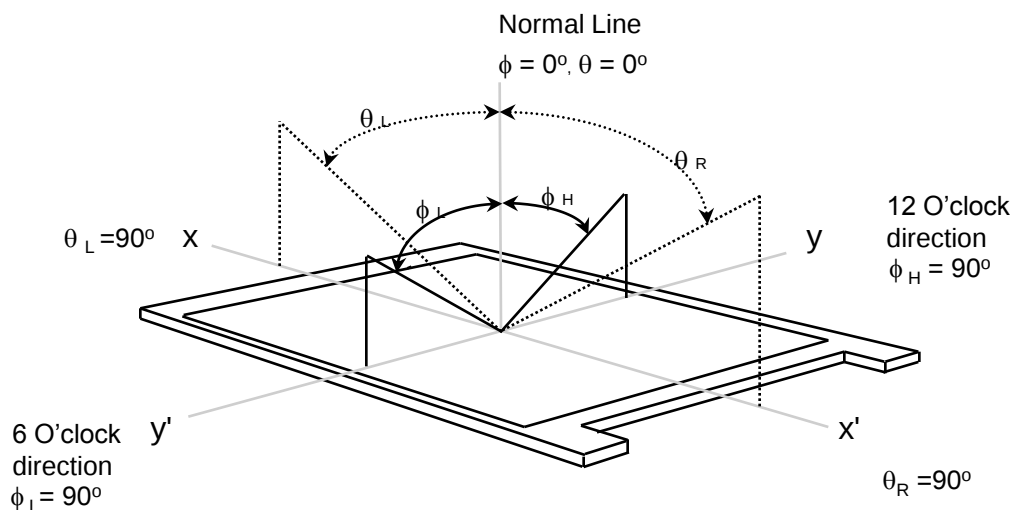
The following items are measured under stable conditions. The optical characteristics should be measured in a dark room or equivalent state with the methods shown in Note (5).
Measuring equipment : TOPCON SR-3

* Ta = 25 ± 2 °C, V_{DD}=3.3V, fv= 60HZ, f_{DCLK}=76.3MHZ, IL = 23mA

Item		Symbol	Condition	Min.	Typ.	Max	Unit	Note
Contrast Ratio (5 Points)		CR	Normal Viewing Angle $\phi = 0$ $\theta = 0$	500	-	-	-	(1), (2), (5)
Response Time at Ta (Rising + Falling)		T _{RT}		-	16	25	msec	(1), (3)
Average Luminance of White (5 Points)		Y _{L,AVE}		170	200	-	cd/m²	I _L = 23mA (1), (4)
Color Chromaticity (CIE)	Red	R _X		TYP -0.03	0.585	TYP +0.03	-	(1), (5) SR-3
		R _Y			0.355			
	Green	G _X			0.350			
		G _Y			0.580			
	Blue	B _X			0.165			
		B _Y			0.125			
	White	W _X			0.313			
		W _Y	0.329					
Viewing Angle	Hor.	θ_L	CR ≥ 10 At center	30	45	-	Degrees	(1), (5) SR-3
		θ_R		30	45	-		
	Ver.	ϕ_H		10	15	-		
		ϕ_L		20	35	-		
13 Points White Variation		δ_L		-	-	1.6	-	(6)

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Note 1) Definition of Viewing Angle : Viewing angle range($10 \leq C/R$)

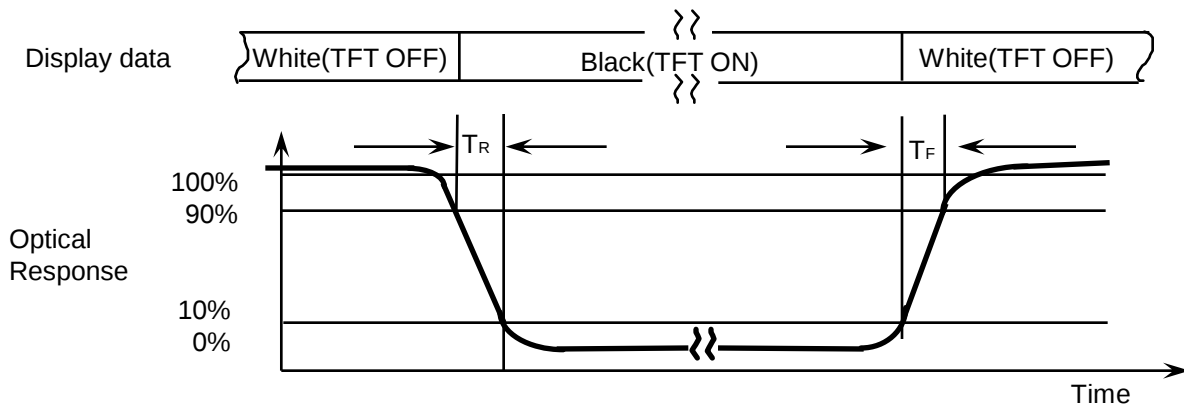


Note 2) Definition of Contrast Ratio (CR) : Ratio of gray max (Gmax), gray min (Gmin) at 5 points (33, 55, 77, 37, 73)

$$CR = \frac{CR(33) + CR(55) + CR(77) + CR(37) + CR(73)}{5}$$

Points : 33, 55, 77, 37, 73 at the figure of Note (6).

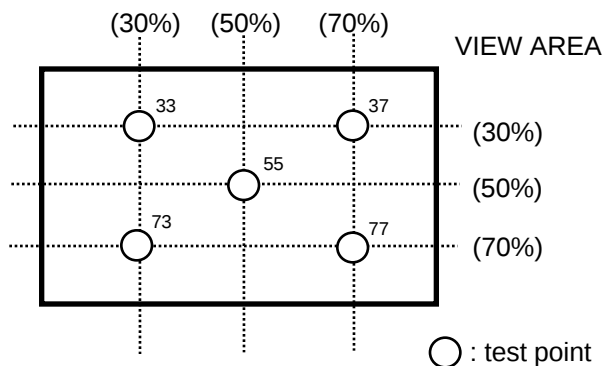
Note 3) Definition of Response time :



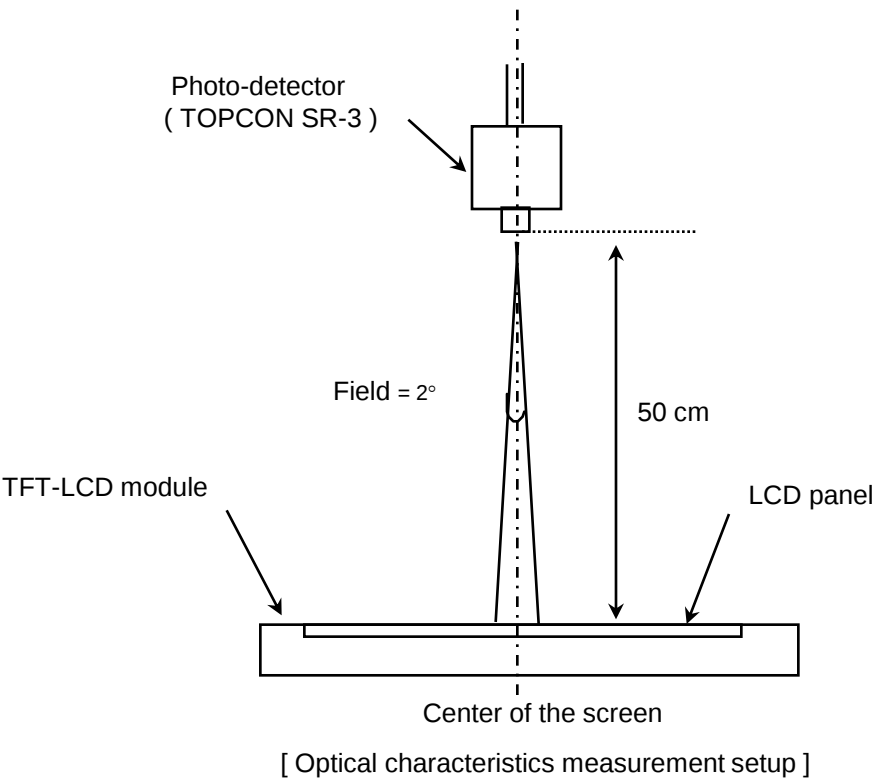
Note 4) Definition of Average Luminance of White : measure the luminance of white at 5 points.

Average Luminance of White ($Y_{L,AVE}$)

$$Y_{L,AVE} = \frac{Y_{L33} + Y_{L55} + Y_{L77} + Y_{L37} + Y_{L73}}{5}$$

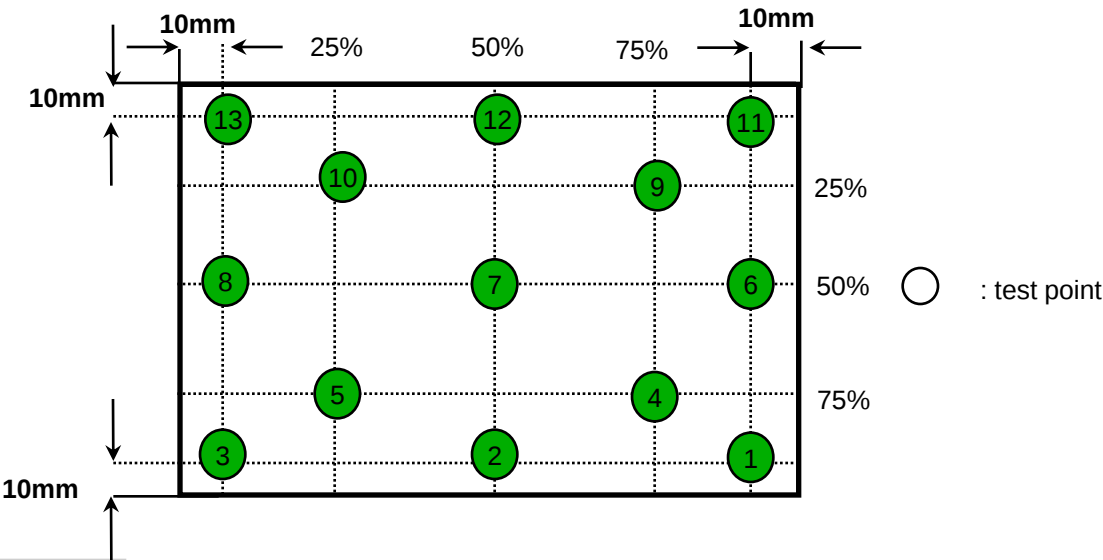


Note 5) After stabilizing and leaving the panel alone at a given temperature for 30 min , the measurement should be executed. Measurement should be executed in a stable, windless, and dark room.
30 min after lighting the backlight. This should be measured in the center of screen.
LED current : 23.0mA
Environment condition : Ta = 25 ± 2 °C



Note 6) Definition of 13 points white variation (δ_L), [① ~ ⑬]

$$\delta_L = \frac{\text{Maximum luminance of 13 points}}{\text{Minimum luminance of 13 points}}$$



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3. ELECTRICAL CHARACTERISTICS

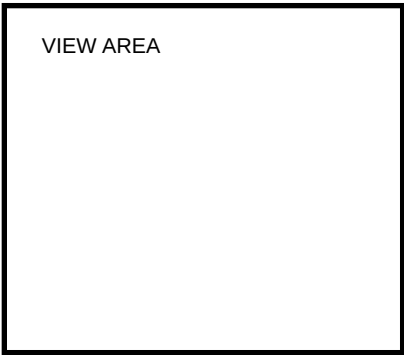
3.1 TFT LCD MODULE

Ta= 25 ± 2°C

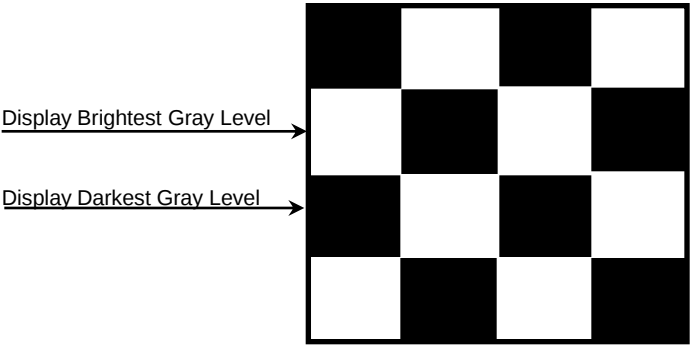
Item		Symbol	Min.	Typ.	Max.	Unit	Note
Voltage of Power Supply		Vcc	3.0	3.3	3.6	V	
Differential Input Voltage for LVDS Receiver Threshold	High	V _{IH}	-	-	+100	mV	V _{CM} = +1.2V
	Low	V _{IL}	-100	-	-	mV	
Vsync Frequency		f _v	-	60	-	Hz	
Hsync Frequency		f _H	-	46.8	-	KHz	
Main Frequency		f _{DCLK}		69.3		MHz	
Rush Current		I _{RUSH}	-	-	1.5	A	(4)
Current of Power Supply	White	I _{DD}	-	210	-	mA	(2),(3)*a
	Mosaic		-	210	242	mA	(2),(3)*b
	V-stripe		-	335	-	mA	(2),(3)*c

- Note (1) Display data pins and timing signal pins should be connected.(GND = 0V)
- (2) f_v = 60Hz, f_{DCLK} = 76.3MHZ, V_{DD} = 3.3V , DC Current.
- (3) Power dissipation pattern

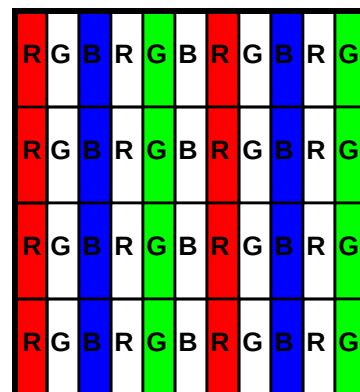
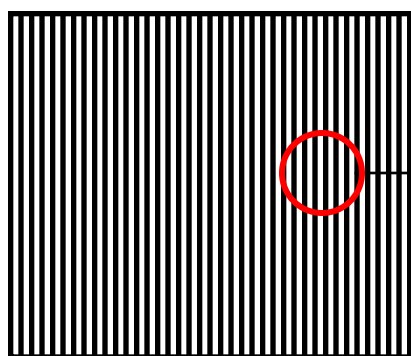
*a) White Pattern



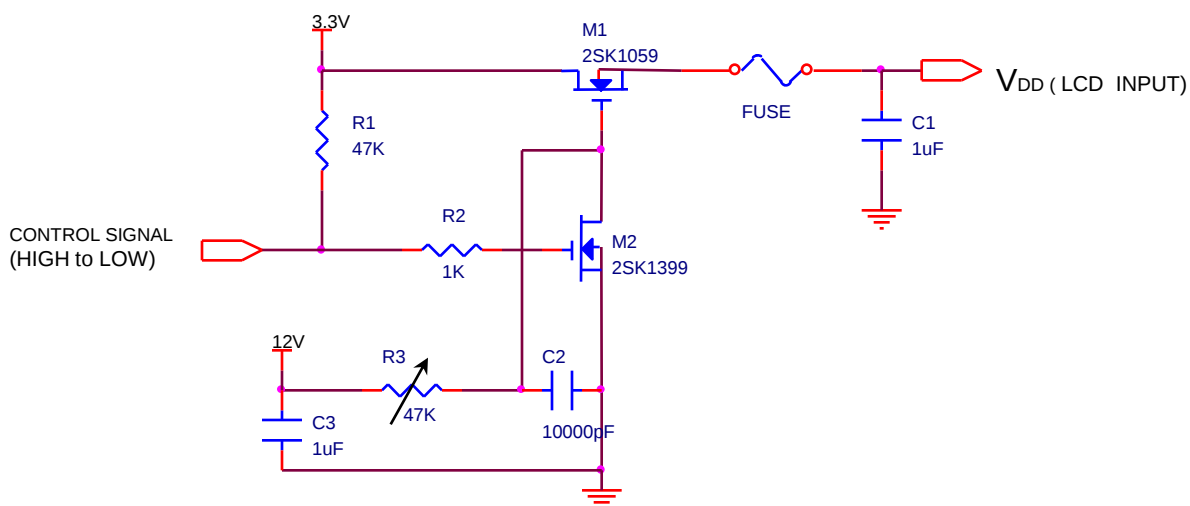
*b) Mosaic Pattern



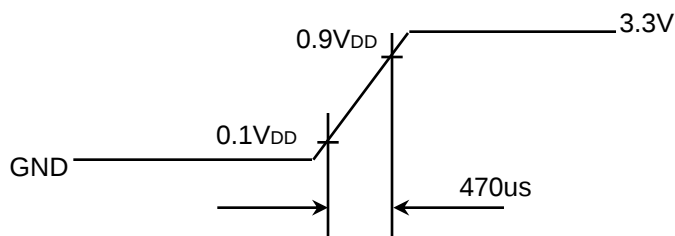
*c) 1dot Vertical stripe pattern



4) Rush current measurement condition



V_{DD} rising time is 470us



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3.2 BACK-LIGHT UNIT

$T_a = 25 \pm 2 \text{ }^{\circ}\text{C}$

Item	Symbol	Min.	Typ.	Max.	Unit	Note
LED Forward Current	IF	-	23	-	mA	
LED Forward Voltage	VF	-	3.2	3.4	V	
LED Array Voltage	VP	-	32	-	V	VF X 10 LEDs
Power Consumption	P	-	2.8	3.0	W	IF X VF X 30 LEDs
Operating Life Time	Hr	12,000	-	-	Hour	(1)

Note (1) Life time (Hr) of LEDs can be defined as the time in which it continues to operate under the condition $T_a = 25 \pm 2 \text{ }^{\circ}\text{C}$ and $I_F = 23 \text{ mA}$ until one of the following event occurs.

1. When the brightness becomes 50% or lower than the original.

3.3 LED Driver

- On board LED Driver (Manufacturer : Richtek)

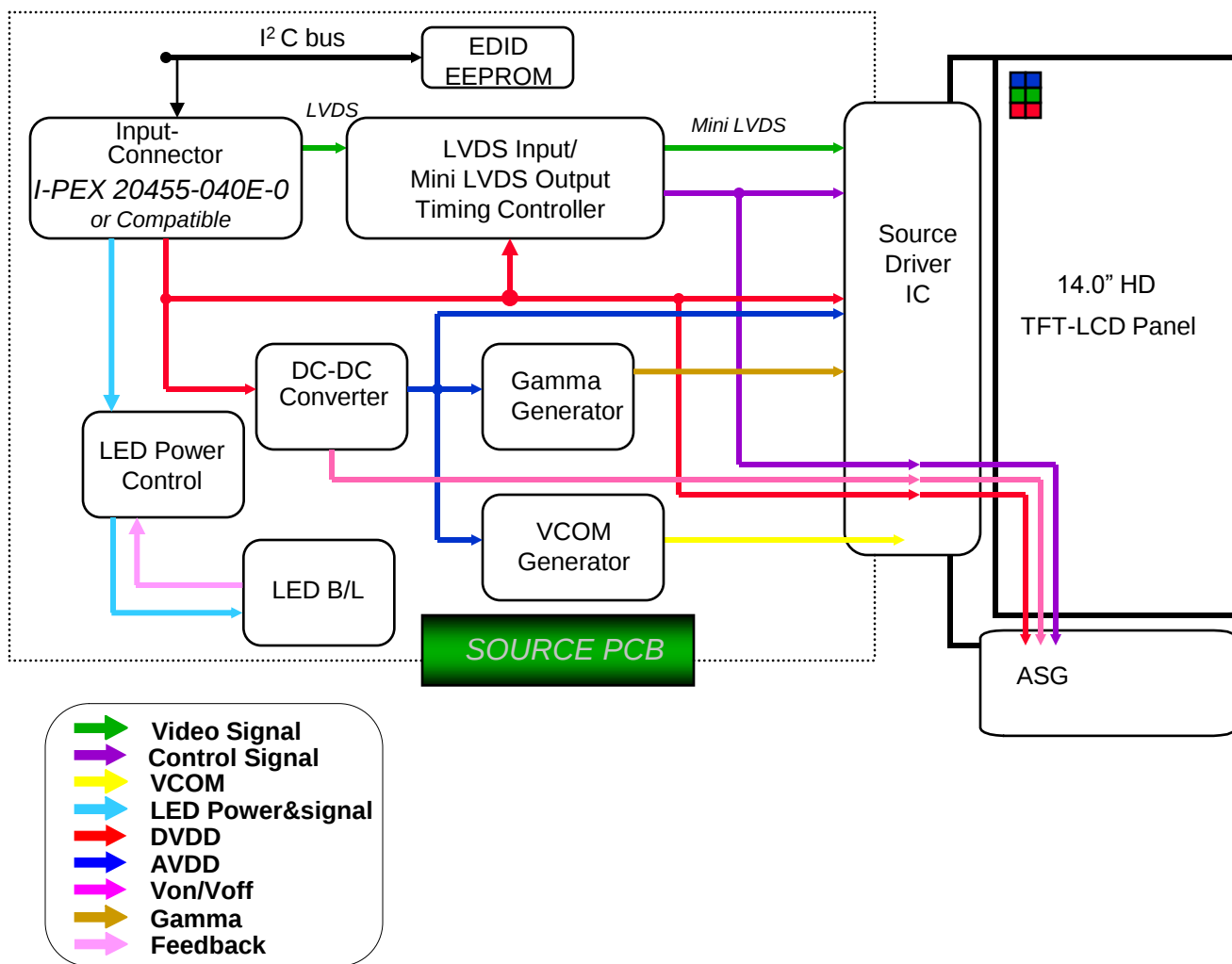
$T_a = 25 \pm 2 \text{ }^{\circ}\text{C}$

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Input Voltage	V_{in}	6	12	20	V	
Enable Control Level	V	0	-	20	V	ON Level : 2V Min OFF Level : 0.8V Max
PWM Control Level	V_{PWM}	0		20	V	ON Level : 2V Min OFF Level : 0.8V Max
PWM Control Duty Ratio	%	5	-	100	%	
PWM Input Frequency	BLIM	0.2	-	1	KHz	

Note - Test Equipment : Fluke 45

4. BLOCK DIAGRAM

4.1 TFT LCD Module



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5. INPUT TERMINAL PIN ASSIGNMENT

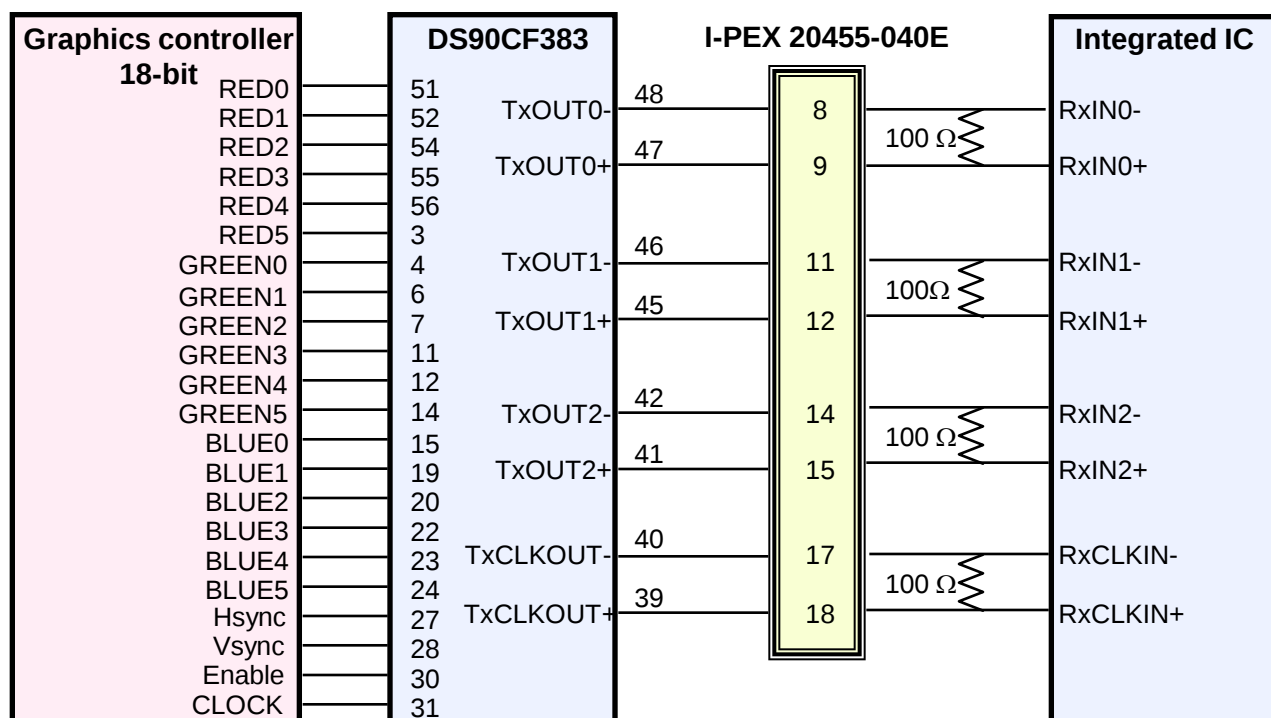
5.1. Input Signal & Power (LVDS, Connector : I-PEX 20455-040E-12)

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

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5.2 LVDS Interface : Transmitter DS90CF363 or Compatible

Pin No.	Name	RGB Signal	Pin No.	Name	RGB Signal
51	TxIN0	R0	14	TxIN14	G5
52	TxIN1	R1	15	TxIN15	B0
54	TxIN2	R2	19	TxIN18	B1
55	TxIN3	R3	20	TxIN19	B2
56	TxIN4	R4	22	TxIN20	B3
3	TxIN6	R5	23	TxIN21	B4
4	TxIN7	G0	24	TxIN22	B5
6	TxIN8	G1	27	TxIN24	Hsync
7	TxIN9	G2	28	TxIN25	Vsync
11	TxIN12	G3	30	TxIN26	DE
12	TxIN13	G4	31	TxCLKIN	Clock

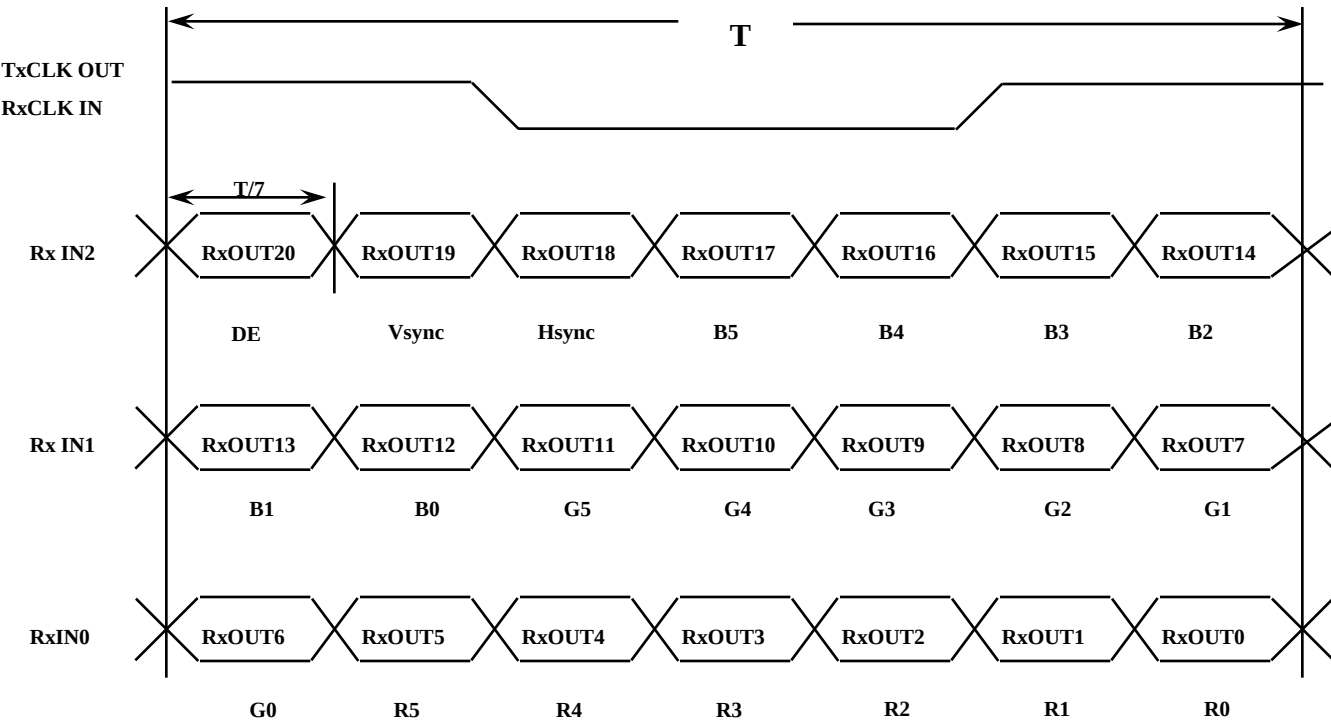
LVDS INTERFACE

Note : The LCD Module uses a 100ohm resistor between positive and negative lines of each receiver input.

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5.3 Timing Diagrams of LVDS For Transmission

LVDS Receiver : Integrated T-CON



5.4 Input Signals, Basic Display Colors and Gray Scale of Each Color

Color	Display	Data Signal																		Gray Scale Level
		Red						Green						Blue						
		R0	R1	R2	R3	R4	R5	G0	G1	G2	G3	G4	G5	B0	B1	B2	B3	45	B5	
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	R0
	Dark	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	R1
	↑	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	R2
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	R3~R60
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:		
	↓	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	R61
	Light	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	R62
	Red	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	R63
Gray Scale Of Green	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	G0
	Dark	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	G1
	↑	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	G2
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	G3~G60
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:		
	↓	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	G61
	Light	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	G62
	Green	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	G63
Gray Scale Of Blue	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	B0
	Dark	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	B1
	↑	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	B2
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	B3~B60
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:		
	↓	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	B61
	Light	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	B62
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	B63

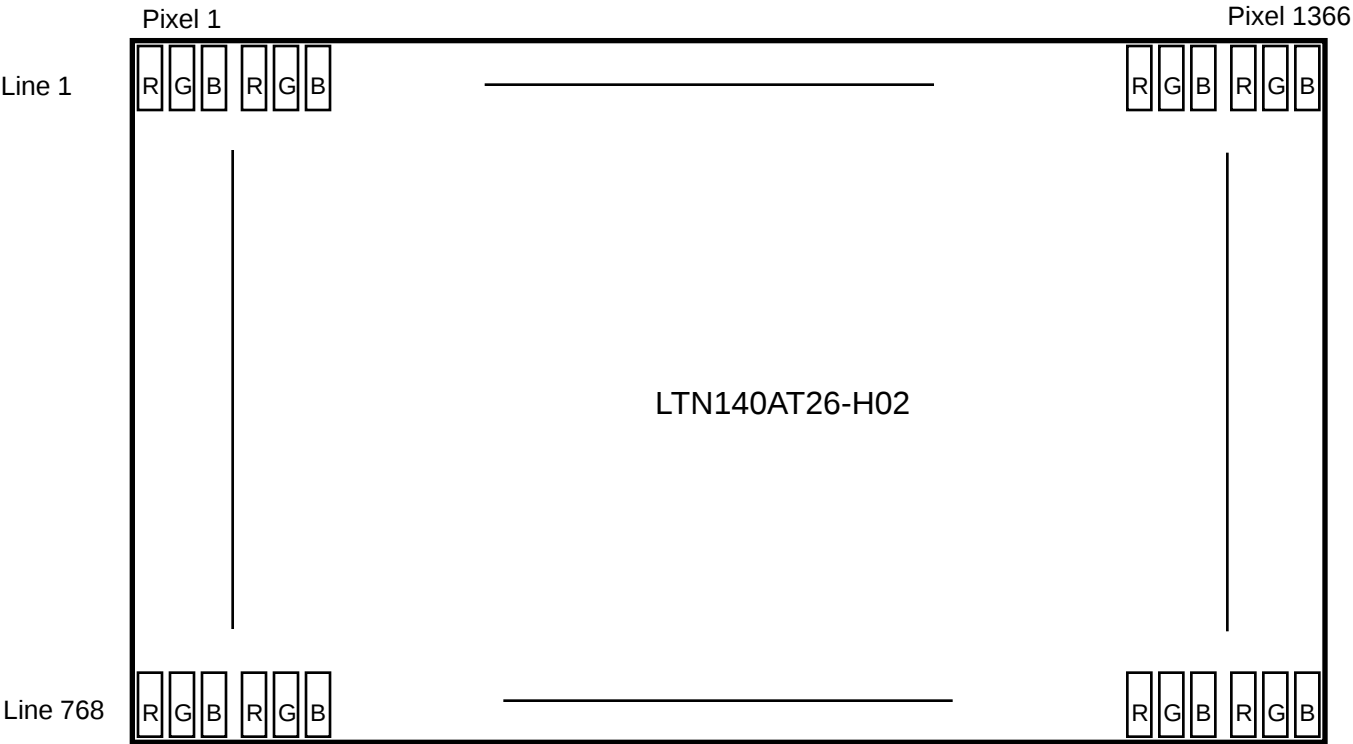
Note 1) Definition of gray :

Rn: Red gray, Gn: Green gray, Bn: Blue gray (n=gray level)

Note 2) Input signal: 0 =Low level voltage, 1=High level voltage

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5.5 Pixel Format in the display

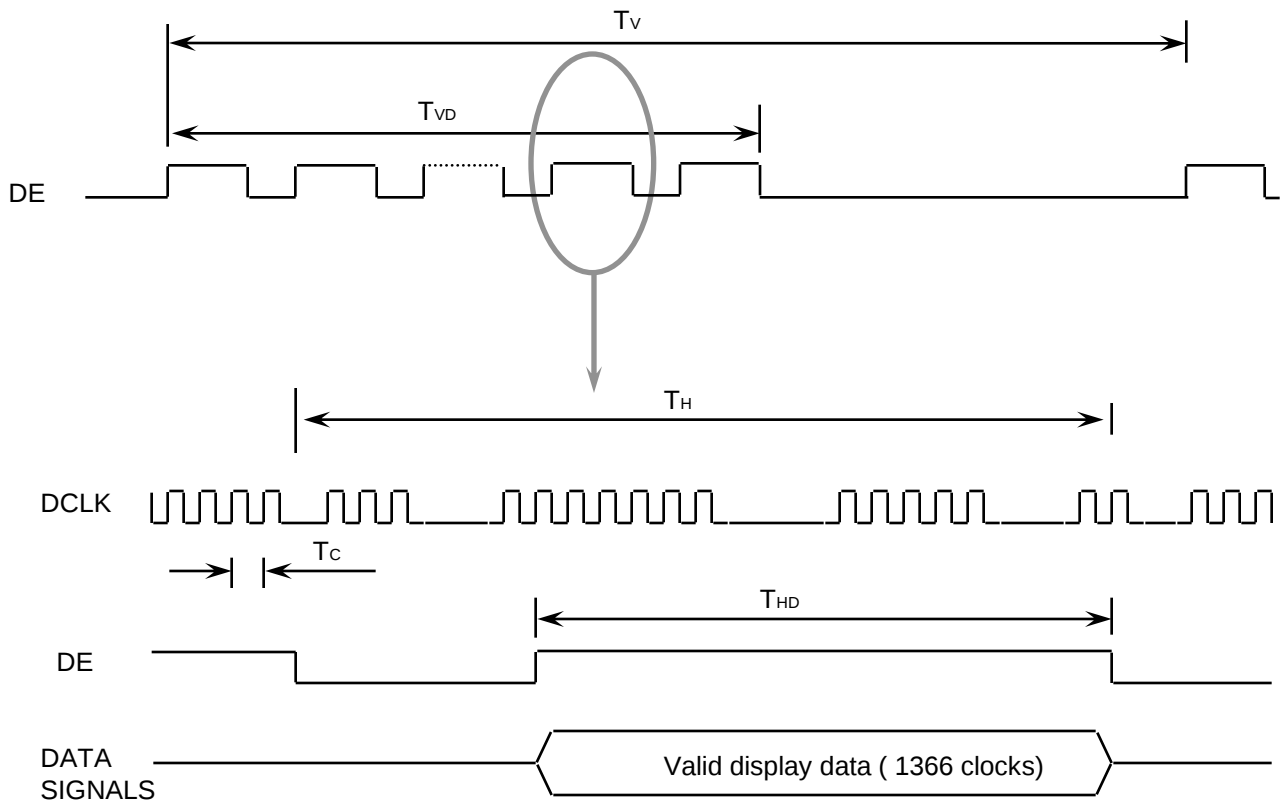


6. INTERFACE TIMING

6.1 Timing Parameters

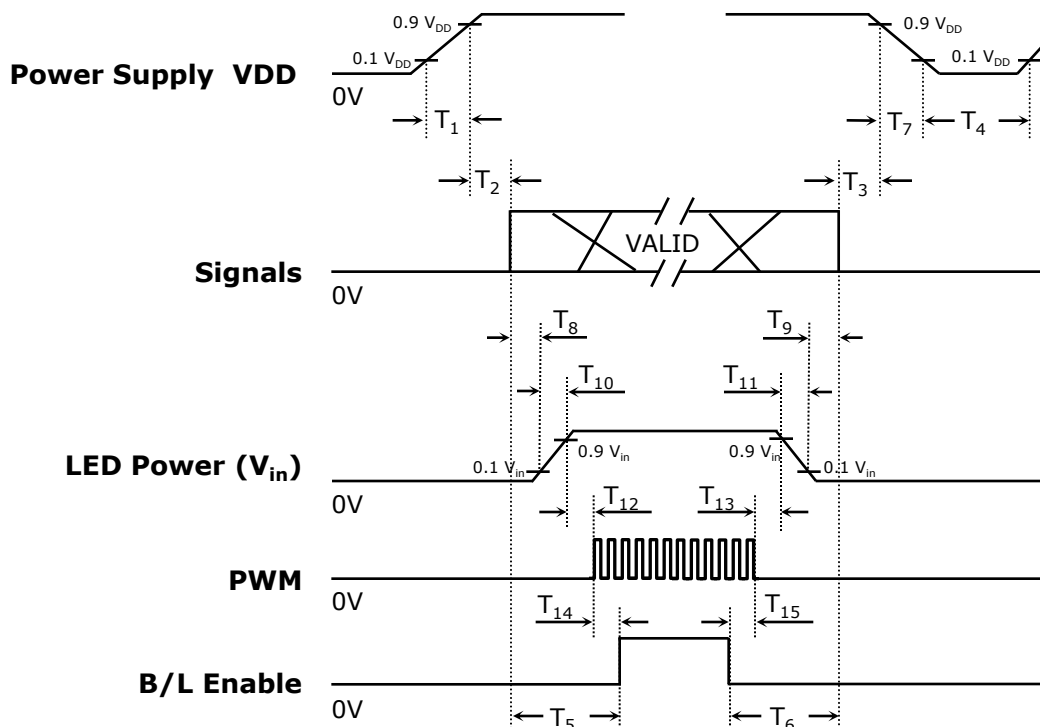
Signal	Item	Symbol	Min.	Typ.	Max.	Unit	Note
Frame Frequency	Cycle	TV	784	792	799	Lines	-
Vertical Active Display Term	Display Period	TVD	-	768	-	Lines	-
One Line Scanning Time	Cycle	TH	1589	1606	1622	Clocks	-
Horizontal Active Display Term	Display Period	THD	-	1366	-	pixels	-

6.2 Timing diagrams of interface signal



6.3 Power ON/OFF Sequence

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

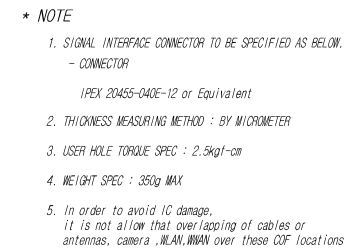


Timing (ms)	Remarks
$0.5 < T_1 \leq 10$	V _{DD} rising time from 10% to 90%
$0 < T_2 \leq 50$	Delay from V _{DD} to valid data at power ON
$0 < T_3 \leq 50$	Delay from valid data OFF to V _{DD} OFF at power Off
$500 \leq T_4$	V _{DD} OFF time for Windows restart
$200 \leq T_5$	Delay from valid data to B/L enable at power ON
$200 \leq T_6$	Delay from valid data off to B/L disable at power Off
$0 < T_7 \leq 10$	V _{DD} falling time from 90% to 10%
$10 < T_8$	Delay from valid data on to LED driver V _{in} rising time 10%
$10 < T_9$	Delay from LED driver V _{in} falling time 10% to valid data Off
$0.5 < T_{10} \leq 10$	LED V _{in} rising time from 10% to 90%
$0.5 < T_{11} \leq 10$	LED V _{in} falling time from 90% to 10%
$10 < T_{12}$	Delay from LED driver V _{in} rising time 90% to PWM ON
$10 < T_{13}$	Delay from PWM Off to LED driver V _{in} falling time 10%
$10 < T_{14}$	Delay from PWM ON to B/L Enable ON
$10 < T_{15}$	Delay from B/L Enable Off to PWM Off

Note : Backlight may flash if interface signal remains floating state at invalid period.

7. Mechanical Outline Dimension

Refer to the next page

[illegible]

REV					DATE		DESCRIPTION OF REVISION			REASON		DWG NO	
UNIT	SCALE	DATE	CHK'D BY	APP'D BY	MODEL NAME	L7N140AT26-H02							
	1/1		J. H. HONG		PART/SHEET NAME	OUTLINE DIMENSION						SHEET	
TO CHANGE					3002-01-11								
SAMSUNG ELECTRONICS					SPEC. NO.								
					CODE NO.					VER.			

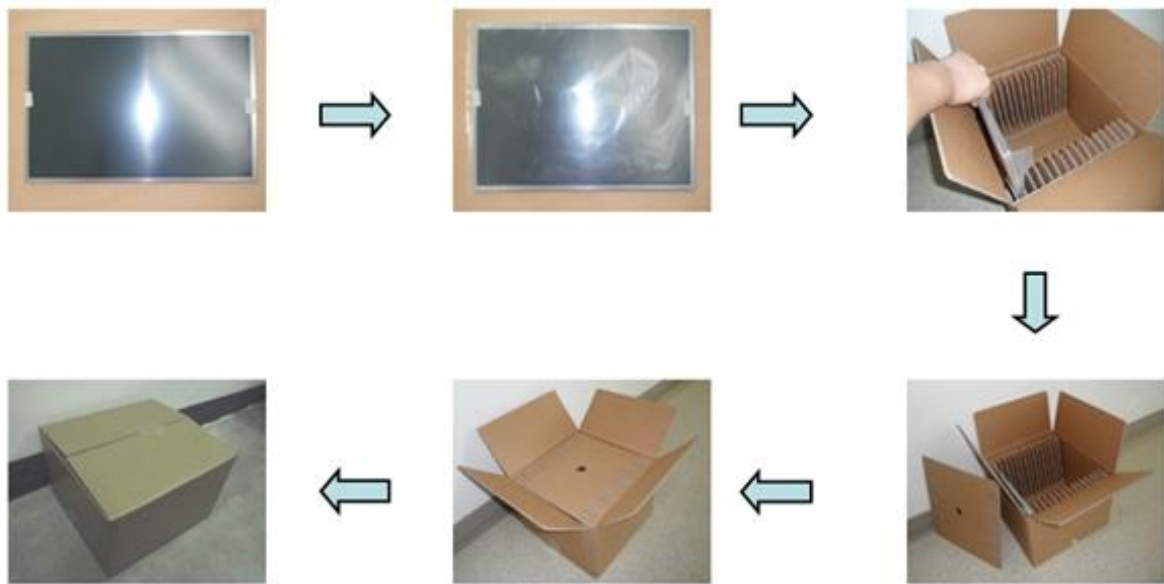
8. PACKING

Approval

1. CARTON(Internal Package)

(1) Packing Form
Paper

(2) Packing Method



- Note (1) Total : Approx. 11.5 Kg
- (2) Acceptance number of piling : 30 sets
- (3) Carton size : 374.5(W) X 375(D) X 264(H)
- (4) MAX accumulation quantity : 6 cartons

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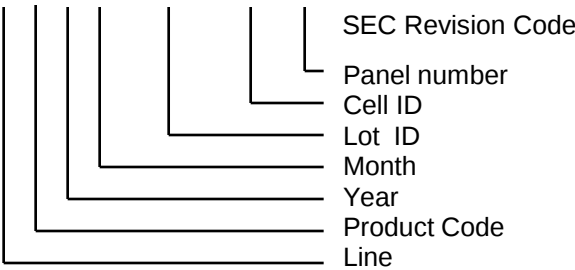
(3)Packing Material

No	Part name	Quantity
1	Static electric protective sack	30
2	Packing case (Inner box) included shock absorber	1set
3	Pictorial marking	2 pcs
4	Carton	1set

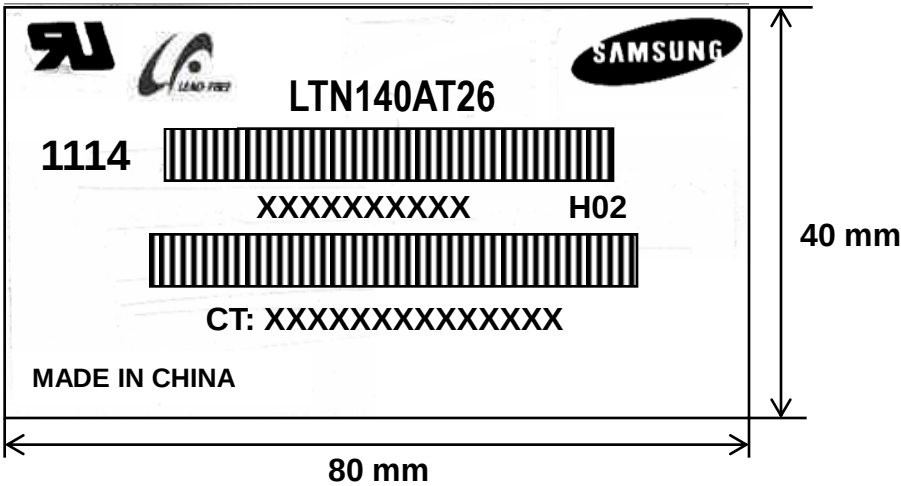
9. MARKINGS & OTHERS

A nameplate bearing followed by is affixed to a shipped product at the specified location on each product.

- (1)Parts number : LTN140AT26
- (2)Revision code : 3 letters
- (3)Lot number : X X X X XXX XX X **H02**



(5) Nameplate Indication (Following example is only for reference)



Parts name : LTN140AT26

Lot number : XXXXXXXXXXXX

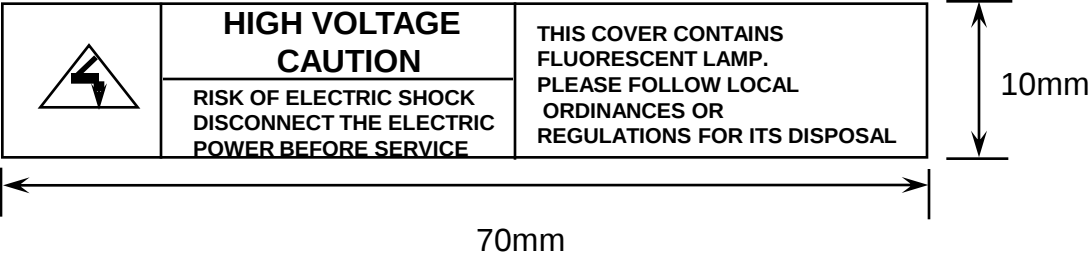
Inspected work week : 1114 (2011 year 14th week)

Product Revision Code : H02

CT code : XXXXXXXXXXXXXX (Released after HP's approval)

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(5) High voltage caution notice



(6) Packing small box attach



DEVICE : LTN140AT26

TYPE : H02

QTY : 030PCS



XXXXXXXXXX

HP PN : XXXXXX - XXX

MADE IN CHINA

1. Handling

- (a) When the module is assembled, It should be attached to the system firmly using every mounting holes. Be careful not to twist and bend the modules.
- (b) Refrain from strong mechanical shock and / or any force to the module. In addition to damage, this may cause improper operation or damage to the module.
- (c) Note that polarizers are very fragile and could be easily damaged. Do not press or scratch the surface harder than a HB pencil lead.
- (d) Wipe off water droplets or oil immediately. If you leave the droplets for a long time, Staining and discoloration may occur.
- (e) If the surface of the polarizer is dirty, clean it using some absorbent cotton or soft cloth.
- (f) The desirable cleaners are water, IPA (Isoprophyl Alcohol) or Hexane.
Do not use Ketone type materials(ex. Acetone), Ethyl alcohol, Toluene, Ethyl acid or Methyl chloride. It might permanent damage to the polarizer due to chemical reaction.
- (g) 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, legs or clothes, it must be washed away thoroughly with soap.
- (h) Protect the module from static , it may cause damage to the C-MOS Gate Array IC.
- (i) Use fingerstalls with soft gloves in order to keep display clean during the incoming inspection and assembly process.
- (j) Do not disassemble the module.
- (k) Do not pull or fold the lamp wire.
- (l) Do not adjust the variable resistor which is located on the back side.
- (m) Protection film for polarizer on the module shall be slowly peeled off just before use so that the electrostatic charge can be minimized.
- (n) Pins of I/F connector shall not be touched directly with bare hands.

2. STORAGE

Approval

ITEM	Unit	Min.	Max.
Storage Temperature	(°C)	5	40
Storage Humidity	(%rH)	35	75
Storage life	12 months		
Storage Condition	- The storage room should provide good ventilation and temperature control. - Products should not be placed on the floor, but on the Pallet away from a wall. - Prevent products from direct sunlight, moisture nor water; Be cautious of a build up of condensation. - Avoid other hazardous environment while storing goods. - If products delivered or kept in conditions of over the storage period of 3 months, the recommended temperature or humidity range, we recommend you leave them at a temperature of 20°C and a humidity of 50% for 24 hours.		

3. OPERATION

- (a) Do not connect, disconnect the module in the “ Power On” condition.
- (b) Power supply should always be turned on/off by following item 6.3 “ Power on/off sequence “.
- (c) Module has high frequency circuits. Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding methods may be important to minimize the interference.
- (d) The standard limited warranty is only applicable when the module is used for general notebook applications. If used for purposes other than as specified, SEC is not to be held reliable for the defective operations. It is strongly recommended to contact SEC to find out fitness for a particular purpose.

4. OTHERS

- (a) Ultra-violet ray filter is necessary for outdoor operation.
- (b) Avoid condensation of water. It may result in improper operation or disconnection of electrode.
- (c) Do not exceed the absolute maximum rating value. (the supply voltage variation, input voltage variation, variation in part contents and environmental temperature, so on) Otherwise the module may be damaged.
- (d) If the module displays the same pattern continuously for a long period of time, it can be the situation when the image “sticks” to the screen.
- (e) This module has its circuitry PCB's on the rear side and should be handled carefully in order not to be stressed.

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11. EDID

Approval

Address (HEX)	FUNCTION	Value	BIN	DEC	ASCII or Data	Notes
		HEX				
00	Header	00	00000000	0		EDID Header
01		FF	11111111	255		
02		FF	11111111	255		
03		FF	11111111	255		
04		FF	11111111	255		
05		FF	11111111	255		
06		FF	11111111	255		
07		00	00000000	0		
08	ID Manufacturer Name	4C	01001100	76	S	3 character ID
					E	
09		A3	10100011	163	C	"SEC"
0A	ID Product Code	5A	01011010	90	[Z]	
0B		33	00110011	51	[3]	
0C	32-bit serial no.	00	00000000	0		
0D		00	00000000	0		
0E		00	00000000	0		
0F		00	00000000	0		
10	Week of manufacture	00	00000000	0		
11	Year of manufacture	16	00010110	22	2012	2012
12	EDID Structure Ver.	01	00000001	1	1	EDID Ver. 1.0
13	EDID revision #	04	00000100	4	4	EDID Rev. 4
14	Video input definition	90	10010000	144		6 bits, Digital Interface is not defined
15	MaxH image size	1F	00011111	31	31	31 cm(approx)
16	MaxV image size	11	00010001	17	17	17cm(approx)
17	Display Gamma	78	01111000	120	2.2	Gamma 2.2
18	Feature support	0A	00001010	10		
19	Red/green low bits	87	10000111	135		10000111
1A	Blue/white low bits	F5	11110101	245		11111110
1B	Red x/ high bits	94	10010100	148	0.580	Red x0.580= 10010011
1C	Red y	57	01010111	87	0.340	Red y0.339= 01010110
1D	Green x	4F	01001111	79	0.310	Green x0.333= 01010101
1E	Green y	8C	10001100	140	0.550	Green y0.576= 10010011
1F	Blue x	27	00100111	39	0.155	Blue x0.160= 00101001
20	Blue y	27	00100111	39	0.155	Blue y0.115= 00011101
21	White x	50	01010000	80	0.313	White x0.313= 01010000
22	White y	54	01010100	84	0.329	White y0.329= 01010100

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23	Established timing 1	00	00000000	0		
24	Established timing 2	00	00000000	0		
25	Established timing 3	00	00000000	0		
26	Standard timing #1	01	00000001	1		not used
27		01	00000001	1		
28	Standard timing #2	01	00000001	1		not used
29		01	00000001	1		
2A	Standard timing #3	01	00000001	1		not used
2B		01	00000001	1		
2C	Standard timing #4	01	00000001	1		not used
2D		01	00000001	1		
2E	Standard timing #5	01	00000001	1		not used
2F		01	00000001	1		
30	Standard timing #6	01	00000001	1		not used
31		01	00000001	1		
32	Standard timing #7	01	00000001	1		not used
33		01	00000001	1		
34	Standard timing #8	01	00000001	1		not used
35		01	00000001	1		
36	Detailed timing/monitor descriptor #1	CE	11001110	206	76.3	Main clock= 76.3 MHz
37		1D	00011101	29		
38		56	01010110	86	1366	Hor active=1366 pixels
39		F0	11110000	240	240	Hor blanking=240 pixels
3A		50	01010000	80		4bit : 4bit
3B		00	00000000	0	768	Vertical active=768 lines
3C		18	00011000	24	24	Vertical blanking=24 lines
3D		30	00110000	48		4bit : 4bit
3E		40	01000000	64	64	H sync. Offset=64 pixels
3F		30	00110000	48	48	H sync. Width=48 pixels
40		25	00100101	37	2 5	V sync. Offset=2 lines V sync. Width=5 lines
41		00	00000000	0		2bit : 2bit :2bit :2bit
42		35	00110101	53	309	H image size= 309 mm(approx)
43		AE	10101110	174	174	V image size = 174 mm(approx)
44		10	00010000	16		
45		00	00000000	0		No Horizontal Border
46		00	00000000	0		No Vertical Border
47		19	00011001	25		
48	Detailed timing/monitor descriptor #2 (sDRRS 40Hz)	D8	11011000	216	50.8	Main clock= 50.8 MHz
49		13	00010011	19		
4A		56	01010110	86	1366	Hor active=1366 pixels
4B		F0	11110000	240	240	Hor blanking=240 pixels
4C		50	01010000	80		4bit : 4bit
4D		00	00000000	0	768	Vertical active=768 lines
4E		18	00011000	24	24	Vertical blanking=24 lines
4F		30	00110000	48		4bit : 4bit
50		40	01000000	64	64	H sync. Offset=64 pixels
51		30	00110000	48	48	H sync. Width=48 pixels
52		25	00100101	37	2 5	V sync. Offset=2 lines V sync. Width=5 lines
53		00	00000000	0		2bit : 2bit :2bit :2bit
54		35	00110101	53	309	H image size= 309 mm(approx)
55		AE	10101110	174	174	V image size = 174 mm(approx)
56		10	00010000	16		
57		00	00000000	0		No Horizontal Border
58		00	00000000	0		No Vertical Border
59		19	00011001	25		

5A	Detailed timing/monitor descriptor #3 (None)	00	00000000	0		
5B		00	00000000	0		
5C		00	00000000	0		
5D		00	00000000	0		
5E		00	00000000	0		
5F		00	00000000	0		
60		00	00000000	0		
61		00	00000000	0		
62		00	00000000	0		
63		00	00000000	0		
64		00	00000000	0		
65		00	00000000	0		
66		00	00000000	0		
67		00	00000000	0		
68		00	00000000	0		
69		00	00000000	0		
6A		00	00000000	0		
6B		00	00000000	0		
6C	Header	00	00000000	0		Detailed Timing Description#4
6D		00	00000000	0		Flag
6E		00	00000000	0		Reserved
6F		02	00000010	2		For Brightness Table and Power consumption
70		00	00000000	0		Flag
71	Brightness Table	0C	00001100	12		Step 0 = 5%, 11nits
72		42	01000010	66		Step 5 = 30%, 60nits
73		F2	11110010	242		Step 10 = 95%, 200nits
74		0C	00001100	12		
75		4C	01001100	76		
76	Power Consumption	64	01100100	100		
77		13	00010011	19		792mW
78		11	00010001	17		690mW
79		1C	00011100	28		2300mW
7A		6E	01101110	110		220nits
7B	Flags	00	00000000	0		
7C	Flags	00	00000000	0		
7D	Flags	00	00000000	0		
7E	Extension Flag	00	00000000	0		
7F	Checksum	69	01101001	105		