HY-LINE®

COMPUTER COMPONENTS

WSVGA-TFT-PCAP-Modul Datenblatt

Modell   SCF100132UGGU01

Kurzdaten

Hersteller	Data Image
Diagonale	10,1" / 25,6 cm
Format	wide
Auflösung	1024 x 600
Backlight	LED / 170 cd/m²
Interface	LVDS
Touchscreen	ja
Temperatur	0… +50°C (Betrieb)

Vertrieb durch: **HY-LINE** COMPUTER COMPONENTS®

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DATA IMAGE   CORPORATION

CTP Module Specification
PRELIMINARY
ITEM NO.:   SCF100132UGGU01

Table of Contents

Customer Companies	R&D Dept.	Q.C. Dept.	Eng. Dept.	Prod. Dept.
	JACK	JOE	GARY	KEN
Approved by	Version:	Issued Date:	Sheet Code:	Total Pages:
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2. RECORD OF REVISION

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2	21/NOV/11'	11.2 13	18 21	1.Delete ESD 2.Modify QUALITY ASSURANCE
3	12/JAN/12'	3.3 11.1 11.5 16	3 17 18 25	1.Modify Outline Dimension 2.Add Finger & Resolution 3.Modify CTP Life Test 4.Modify OUTLINE DRAWING from Rev: 1 to 2

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				1.Add Viewing Angle Minimum, modify Color Chromaticity
				2.Add PWM Duty ratio Minimum
				3.Modify Table5 LED power 5V to 5~21V
				4.Add Clock Frequency Minimum and maximum
				5.Add LVDS Clock Frequency(single) and V Total Time
				   Minimum, Maximum. Modify H Total Time typical value
				6.Add VDD Current, VDD Power typical value
				   and modify Table 10 Power Sequencing Requirements

5	13/SEP/12'	3.3 3.3 12 16 17	3 3 17 24 25	1.Modify Product Summary 2.Add Module Weight 3.Modify APPEARANCE SEPCIFICATION 4.Modify OUTLINE DRAWING from Rev: 2 to 3 5.Add PACKAGE INFORMATION.
6	21/NOV/12'	16	24	Modify OUTLINE DRAWING from Rev: 3 to 4

3. General Descriptions

3.1 Introduction

The SCF100132UGGU01 is a color active matrix thin film transistor (TFT) liquid crystal display(LCD) that uses amorphous silicon TFT as a switching device. It is composed of a TFT LCD panel, a projected Capacitive Touch Panel ,a timing controller, voltage reference, common voltage, column driver, and row driver circuit. This TFT LCD has a 10.1-inch diagonally measured active display area with WSVGA resolution (1,024vertical by 600 horizontal pixel array). This touch panel module is a transparent type projected capacitive touch panel, which uses SITO glass as the sensing devices. This product is composed of a cover lens, touch panel with COF and adhesive on total module.

3.2 Features

■10.1" TFT LCD Panel

■ LED Light-bar Backlight System

■Composition: 10.1inch WSVGA resolution display with a projected Capacitive Touch Panel (CTP).

Interface：LVDS Interface for panel and USB   6 wire, 2.0 Full speed   for the CTP.

■Supported WSVGA (V:1024 lines, H:600 pixels) Resolution

■ Compatible with RoHS Standard

■Dual Gate

3.3 Product Summary

Items	Specifications	Unit
Screen Diagonal	10.1	Inch
Active Area	222.72(H) x 125.28(V)	mm
Pixels H x V	1,024 (x3)x 600	dots
Pixel Pitch	0.2175(H)x0.2088(V)	mm
Pixel Arrangement	R.G.B. Vertical Stripe	-
Display Mode	Normally White	-
White Luminance	170 (Typ.) 5 points average	cd/m^2 (20mA of per LED)
Contrast Ratio	400(Typ.)	-
Response Time	LCM 16 Typ.	ms
Input Voltage	LCM +3.3 (Typ.)	V
Power Consumption	2.8 (Max)	Watt
Module Weight	324	g
Outline Dimension	240.4*143.12*7.25	mm
Electrical Interface (Logic)	LVDS	-
Support Color	262 K	-
Color Gamut	45%(Typ.)	-
Optimum Viewing Direction (Gray inversion)	6 o'clock	-
Surface Treatment	Clear	-

3.4 Functional Block Diagram
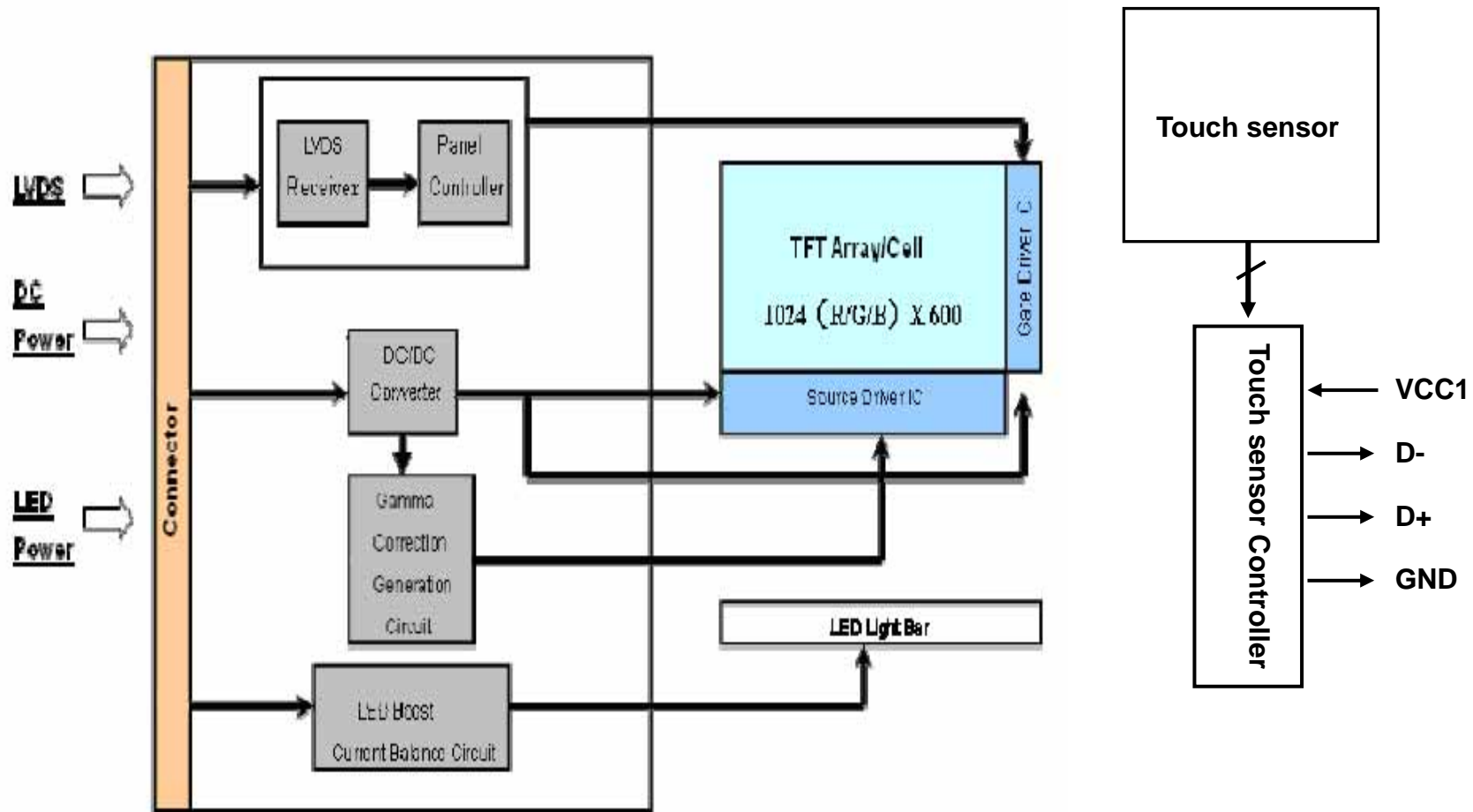
4. Absolute Maximum Ratings

LCM Absolute Maximum Rating

Item	Symbol	Min	Max	Unit	Conditions
Supply Voltage	VDD	-0.3	4.0	V	Typ.=3.3V
Input Signal		-0.3	2.7	V	LVDS signals
Operating Temperature	TOP	0	50	°C	(Note 3)
Operating Humidity	HOP	10	80	% RH	(Note 3)
Storage Temperature	TST	-20	60	°C	(Note 3)
Storage Humidity	HST	10	90	% RH	(Note 3)
Vibration			1.5G	G	30min for X, Y, Z axis
			10～500Hz	Hz	
Shock			220	G	Half sign wave
			2	mS	
LED Current	I-LED		(20)	mA	per LED

Table 1

Note:

(1) Maximum Wet-Bulb should be 39°C. No condensation.

(2) When you apply the LCD module for OA system. Please make sure to keep the temperature of LCD module is less than 60°C.
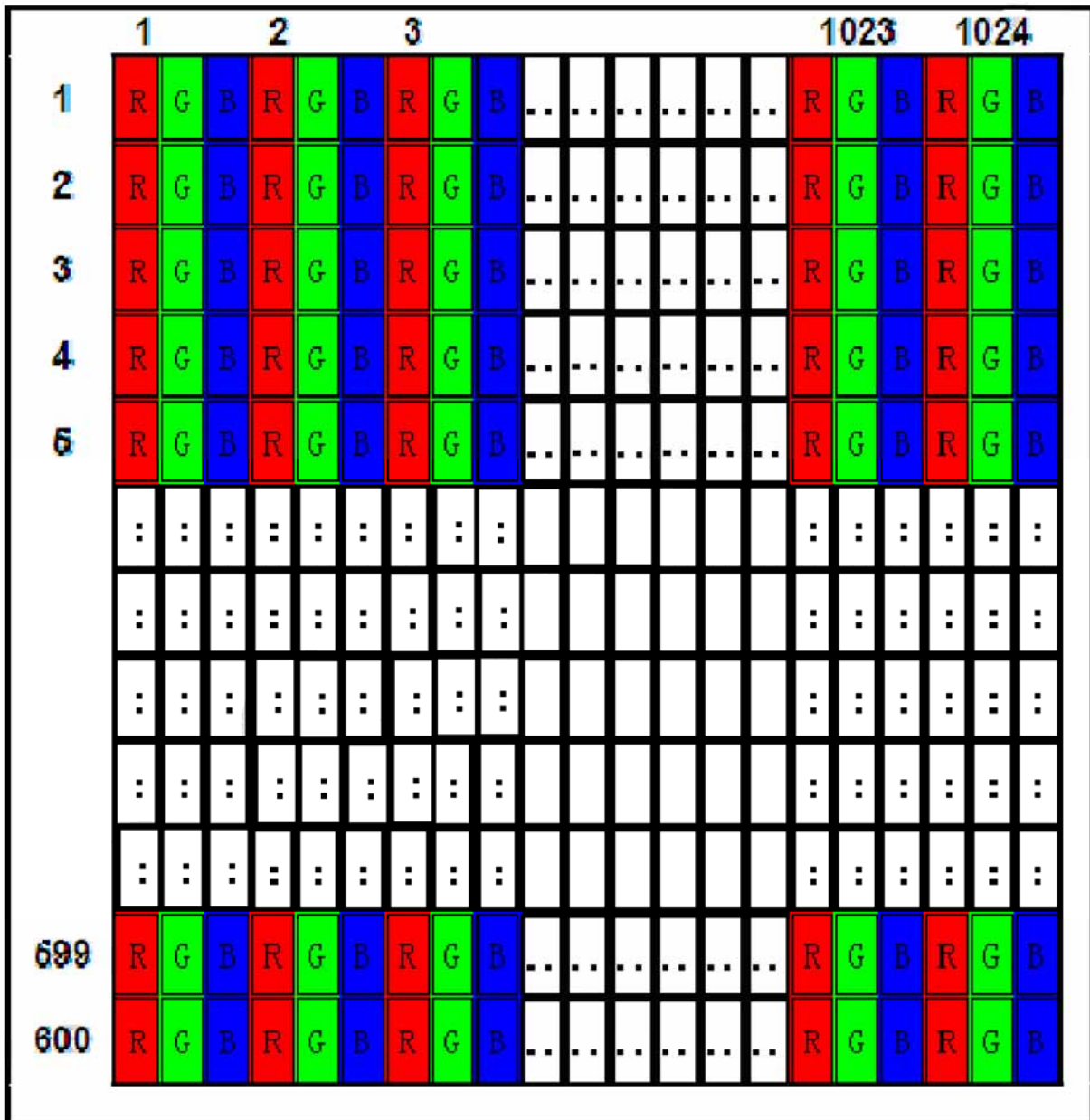
(3) Storage /Operating temperature
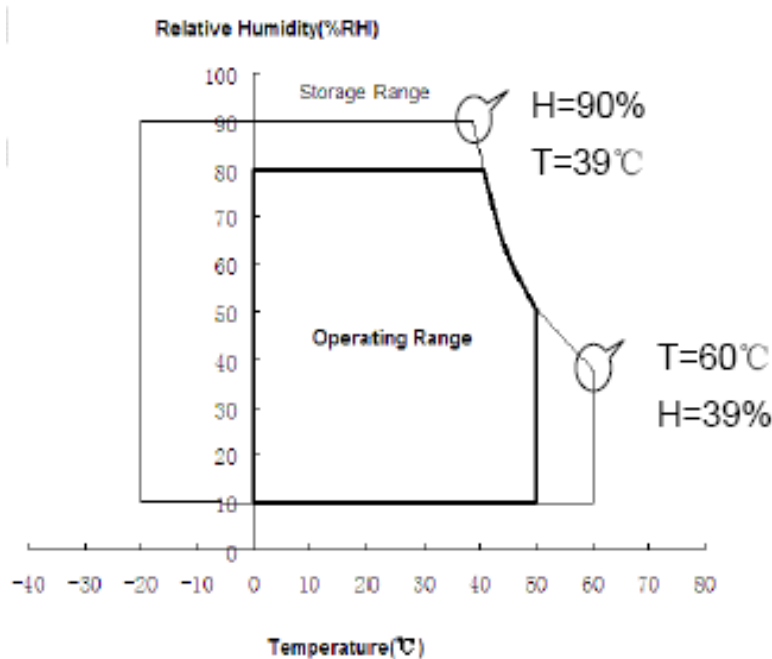
5. Pixel Format Image

Figure 2 shows the relationship of the input signals and LCD pixel format image

6. Optical Characteristics

The optical characteristics are measured under stable conditions as following notes

Item	Conditions		Specification			Note
			Min	Typ.	Max	
Viewing Angle [degrees] K=Contrast Ratio>10	Horizontal	Left	35	45	-	A, B
		Right	35	45	-	
	Vertical	Up	5	15	-	
		Down	25	35	-	
Contrast ratio	Center		TBD	400	-	A, C
Response Time [ms]	Rising + Falling		-	16	-	A, D
Color Chromaticity (CIE1931)	Red	x	Typ. -0.03	0.579	Typ. +0.03	A,
	Red	y		0.346		A,
	Green	x		0.336		A,
	Green	y		0.560		A,
	Blue	x		0.156		A,
	Blue	y		0.123		A,
	White	x	0.263	0.313	0.365	A,
	White	y	0.279	0.329	0.379	A,
White Luminance [cd/㎡]	I-LED=20mA		-	170	-	5 point A, E
Luminance Uniformity [%]	I-LED=20mA , 13points		62.5	-	-	A, F
	I-LED=20mA , 5points		80.0	-	-	

Table 2 Optical Characteristics

Note: A. Measurement Setup:

The LCD module should be stabilized at given temperature for 15 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting backlight for 15 minutes in a windless room.
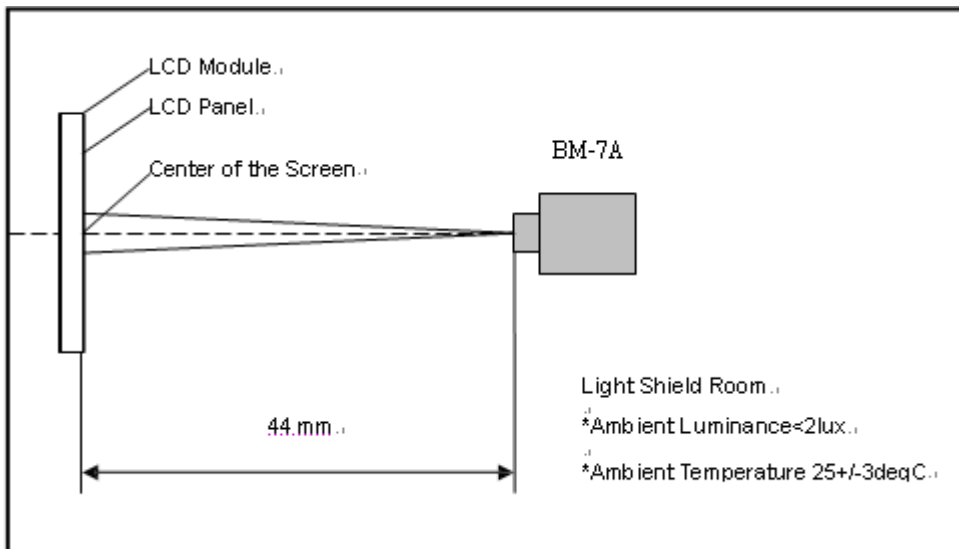

Figure 3 Measurement Setup
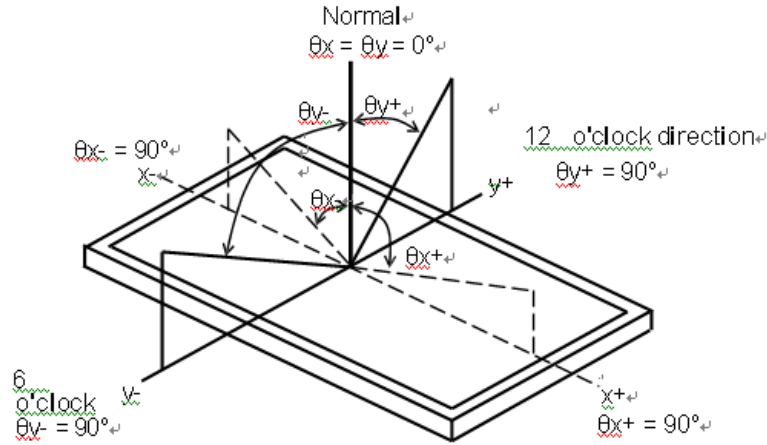
B. Definition of Viewing Angle

Figure 4 Definition of Viewing Angle

C. Definition of Contrast Ratio (CR)

The contrast ratio can be calculated by the following expression

Contrast Ratio (CR) = L63 / L0

L63: Luminance of gray level 63, L0: Luminance of gray level 0
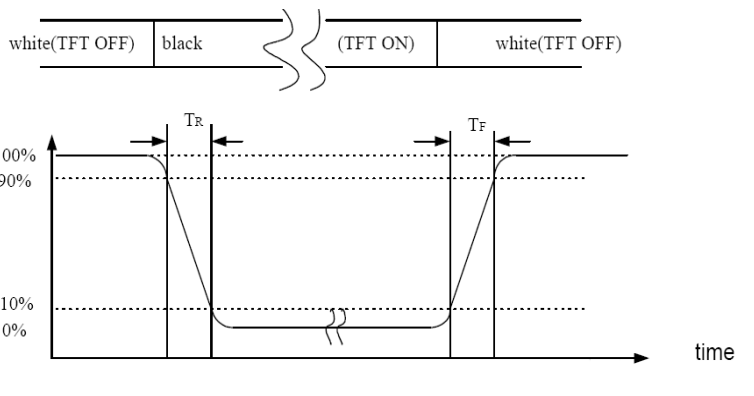
D. Definition of Response Time (T_R, T_F)

Figure 5 Definition of Response Time

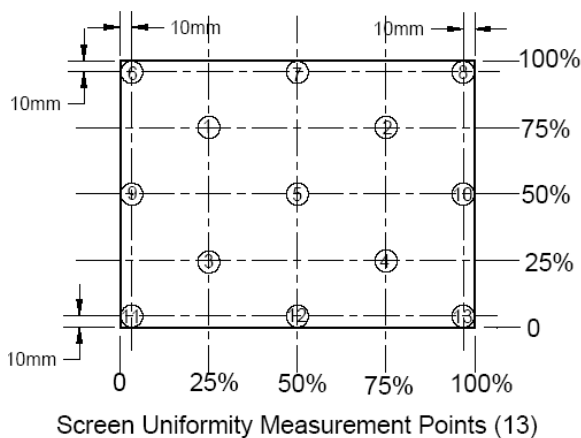Screen Uniformity Measurement Points (13)

Figure 6 Measurement Locations of 13 Points

E.   Definition of Luminance White

   Measure the luminance of gray level 63 at center point and 5 points.
   Center of Luminance = Y1

$$\text{Average Luminance of 5 points} = \frac{Y1+Y2+Y3+Y4+Y5}{5}$$

F. Definition of Luminance Uniformity (Variation)

   Measure the luminance of gray level 63 at 13 points.

$$\text{Uniformity of 13 points} = \frac{\text{Min Luminance of Y1~Y13}}{\text{Max Luminance of Y1~Y13}} \times 100\%$$

$$\text{Uniformity of 5 points} = \frac{\text{Min Luminance of Y1~Y5}}{\text{Max Luminance of Y1~Y5}} \times 100\%$$

7. Backlight Characteristics

7.1 Parameter Guideline of LED Backlight

Symbol	Parameter		Min.	Typ.	Max.	Units	Condition
V_LED	LED input		5	12	21	[V]	Ta=25[deg C]
LT	LED Life Time		10,000	-	-	Hours	Ta=25[deg C] Note C
VPWM_EN	PWM Signal Voltage	High	2.0	3.3	3.6	V	-
		Low	0	-	0.5	V	
FPWM	Output PWM frequency		-	200	1K	Hz	-
VLED_EN	LED enable Voltage	High	2.0	3.3	3.6	V	-
		Low	0	-	0.5		
PWM	PWM Duty ratio		5	--	100	%	-

Table 3 Parameter Guideline for LED Backlight

Note A: I_{LED}=20 mA (Per LED)

Note B: Calculator value for LED chip specification.

Note C: The LED life time define as the estimated time to 50% degradation of initial luminous.

8. ELECTRICAL CHARACTERISTICS

8.1 Interface Connector

Manufacturer	UJU (or equivalent)
Type / Part Number	IS050-L40B-C10

Table 4 Connector Name / Designation

Table 5 Signal Pin Assignment

Pin #	Signal Name	Description	Remarks
1	GND	Ground	
2	VDD	Power supply 3.3V(Typ.)	
3	VDD	Power supply 3.3V(Typ.)	
4	VEDID	EDID +3.3V Power	
5	BIST	Bist Mode	Reserve for Aging
6	CLK_EDID	EDID Clock Input	
7	DAT_EDID	EDID Data Input	
8	RIN0-	LVDS differential data input(R0-R5,G0)	
9	RIN0+	LVDS differential data input(R0-R5,G0)	
10	GND	Ground	
11	RIN1-	LVDS differential data input(G1-G5,B0-B1)	
12	RIN1+	LVDS differential data input(G1-G5,B0-B1)	
13	GND	Ground	
14	RIN2-	LVDS differential data input(B2-B5,HS,VS,DE)	
15	RIN2+	LVDS differential data input(B2-B5,HS,VS,DE)	
16	GND	Ground	
17	CLKN-	LVDS differential clock input	
18	CLKN+	LVDS differential clock input	
19	NC	Not connected(Reserve)	
20	NC	Not connected(Reserve)	
21	NC	Not connected(Reserve)	
22	GND	Ground-Shield	
23	NC	Not connected(Reserve)	
24	NC	Not connected(Reserve)	
25	GND	Ground-Shield	
26	NC	Not connected(Reserve)	
27	NC	Not connected(Reserve)	
28	GND	Ground-Shield	
29	NC	Not connected(Reserve)	
30	NC	Not connected(Reserve)	
31	VLED_GND	LED Ground	
32	VLED_GND	LED Ground	
33	VLED_GND	LED Ground	
34	NC	Not connected(Reserve)	
35	VPWM_EN	System PWM Logic Input Level	
36	VLED_EN	LED enable Input Level(+3.3V)	
37	NC	Not connected(Reserve)	
38	VLED	LED Power Supply 5~21V	
39	VLED	LED Power Supply 5~21V	
40	VLED	LED Power Supply 5~21V	

All input signals shall be low or Hi-Z state when VDD is off

8.2 LVDS Receiver

8.2.1 Signal Electrical Characteristics for LVDS Receiver

The built-in LVDS receiver is compatible with (ANSI/TIA/TIA-644) standard.

Parameter	Symbol	Min	Typ.	Max	Unit	Conditions
Differential Input High Threshold	Vth	-	-	+100	mV	Vcm=+1.2V
Differential Input Low Threshold	Vtl	-100	-	-	mV	Vcm=+1.2V
Magnitude Differential Input Voltage	|Vid|	100	-	600	mV	
Common Mode Voltage	Vcm	0.9	1.2	1.5	V	
Common Mode Voltage Offset	ΔVcm	-	-	50	mV	Vcm=+1.2V

Table 6 LVDS Receiver Electrical Characteristics

Note:

A. Input signals shall be low or Hi-Z state when VDD is off.

B. All electrical characteristics for LVDS signal are defined and shall be measured at the interface connector of LCD.

Parameter	Symbol	Min	Typ.	Max	Unit	Conditions	Note
Clock Frequency	Fc	44.4	50.4	65.2	MHz		

Table 7 Timing Requirements
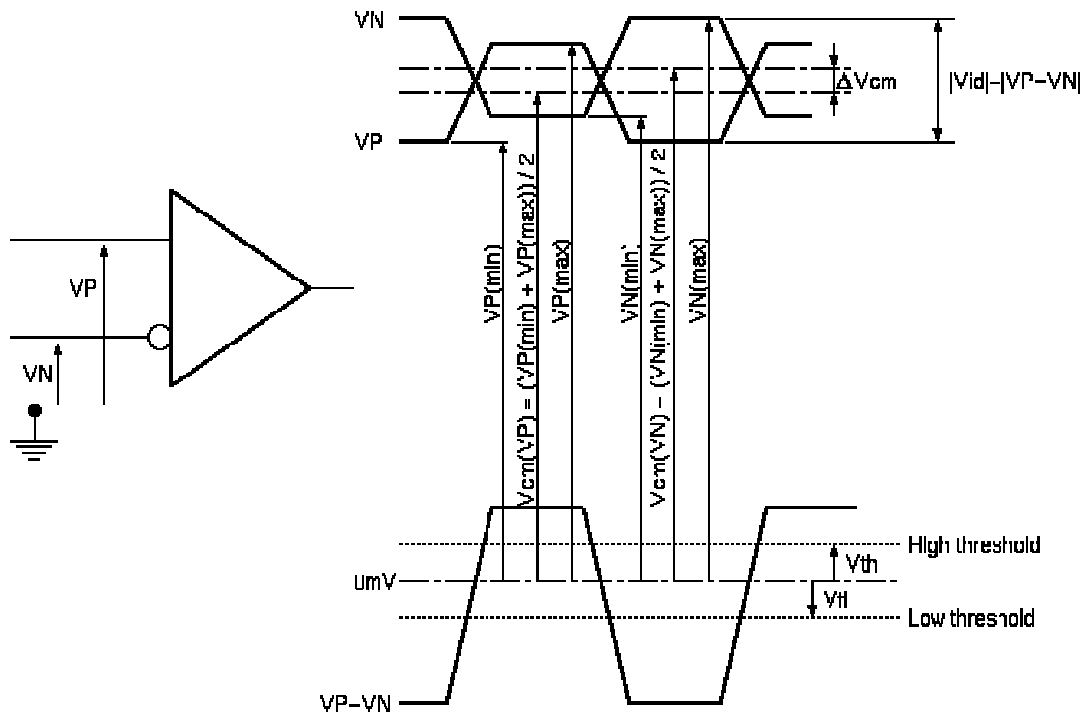
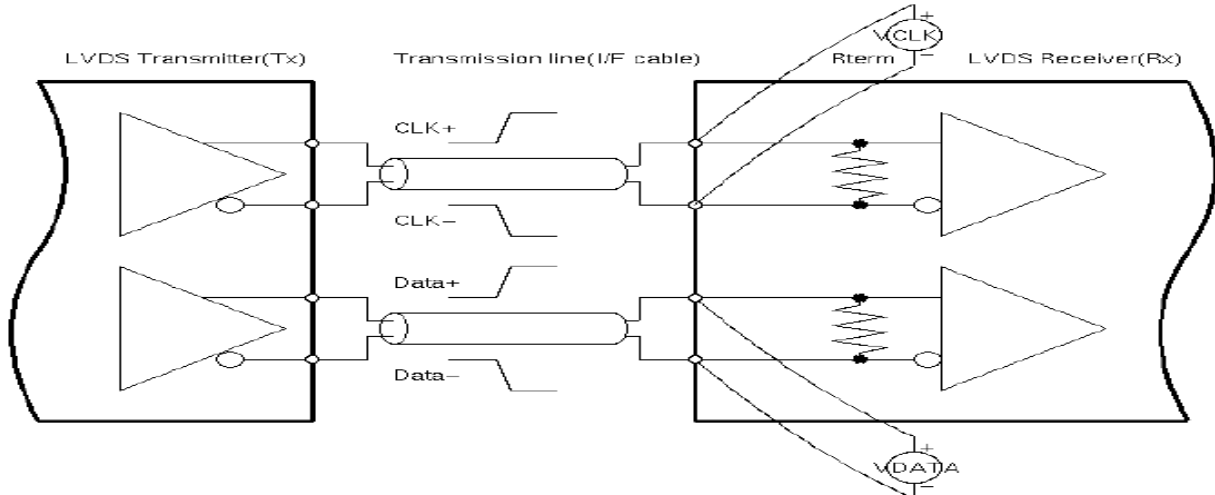Note: All values are at VDD=3.3V, Ta=25 °C. degree C.
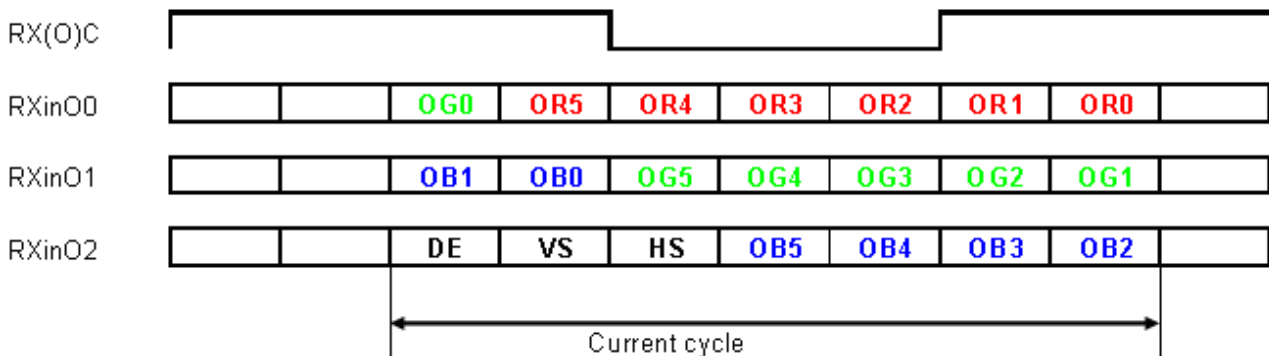

Figure 7 Voltage Definitions

Figure 8 Measurement System
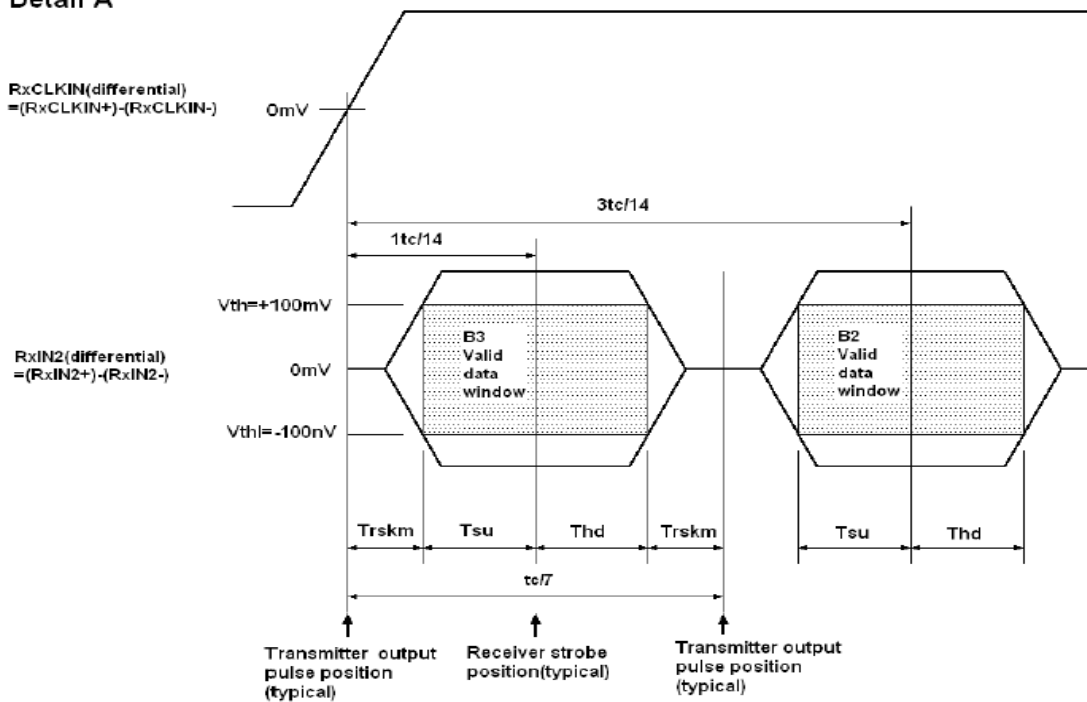

Figure 9 Data mapping

Figure 10 Timing Definition

Note: Tsu and Thd is internal data sampling window of receiver. Trskm is the system skew margin; i.e., the sum of cable skew, source clock jitter, and other inter-symbol interference, shall be less than Trskm.

8.2.2 LVDS Receiver Internal Circuit

Figure 11 LVDS Receiver Internal Circuit shows the internal block diagram of the LVDS receiver. This LCD module equips termination resistors for LVDS link.

RXOC+

RXOC-

PLL → DTCLK

Sampling clocks

RXinO0+

RXinO0-

OG0, OR5, OR4, OR3, OR2, OR1, OR0
EG0, ER5, ER4, ER3, ER2, ER1, ER0

RXinO1+

RXinO1-

OB1, OB0, OG5, OG4, OG3, OG2, OG1
EB1, EB0, EG5, EG4, EG3, EG2, EG1

Serial-to-parallel converter

RXinO2+

RXinO2-

DE, VS, HS, OB5, OB4, OB3, OB2
EB5, EB4, EB3, EB2
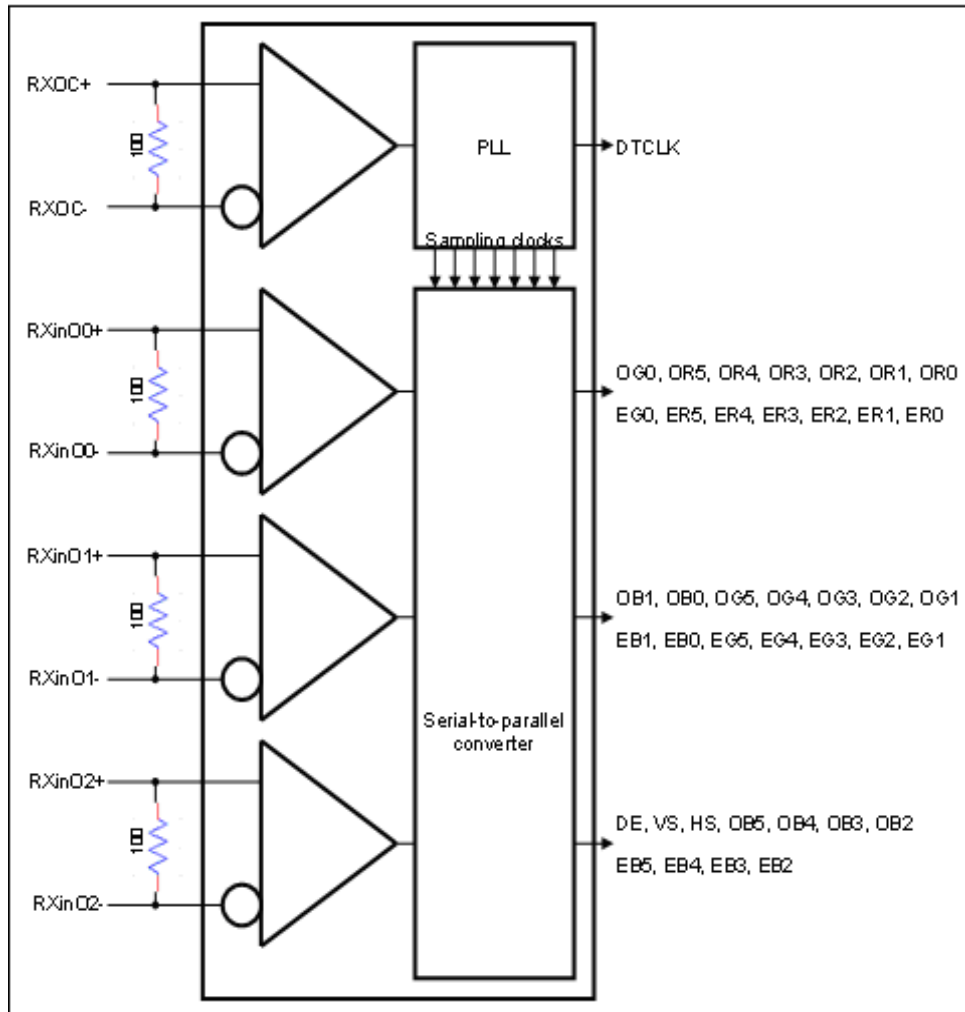
Figure 11 LVDS Receiver Internal Circuit

9. Interface Timings

9.1 Timing Characteristics

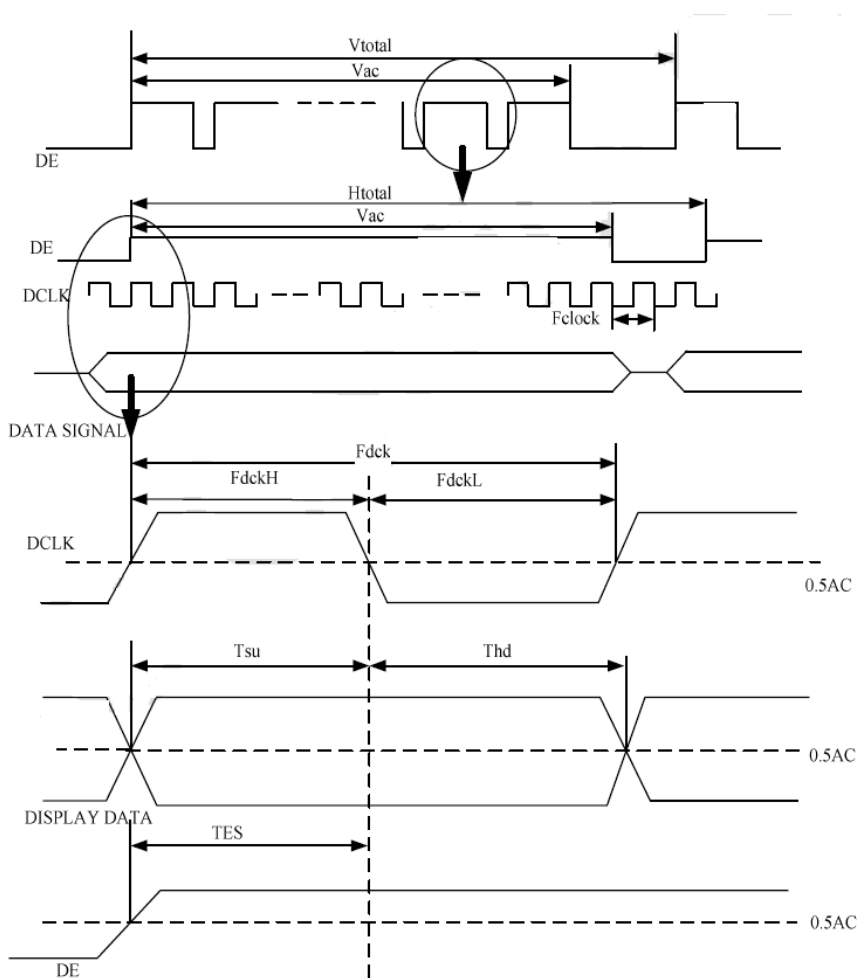| Parameter	Symbol	Unit	MIN	Typ.	MAX
LVDS Clock Frequency(single)	Fdck	MHz	44.4	50.4	65.2
H Total Time	Htotal	clocks	1320	1344	1362
H Active Time	Hac	clocks	1024	1024	1024
V Total Time	Vtotal	lines	612	625	638
V Active Time	Vac	lines	600	600	600
Frame Rate	Vsync	Hz	55	60	65

Table 8 Interface Timings

Figure 12 Timing Characteristics

Note: TES is data enable signal setup time.

10. LCD Power Consumption

Input power specifications are as follows.

Symbol	Parameter	Min	Typ.	Max	Units	Condition
VDD	Logic/LCD Drive Voltage	3.0	3.3	3.6	[V]	
IDD	VDD Current	--	160	--	[A]	All black pattern, 60Hz
PDD	VDD Power	--	--	0.53	[W]	Max pattern, 60Hz
Irush	Rush Current	--	--	2	[A]	
VDDrp	Allowable Logic/LCD Drive Ripple Voltage	--	--	300	[mVp-p]	

Table 9 Power Consumption

Power ON/OFF Sequence

VDD power, interface signals, and lamp on/off sequence are shown in Figure 13.Signals shall be Hi-Z state or low level when VDD is off.
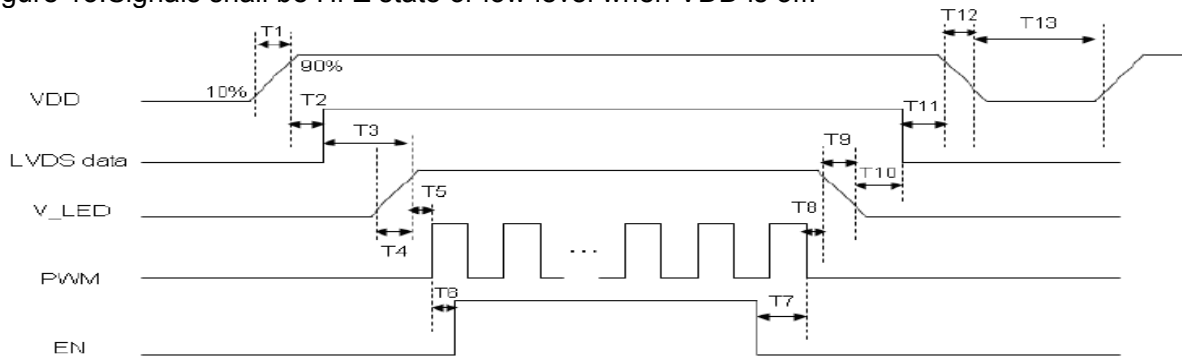

. Figure 13 Power Sequence

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

Table 10 Power Sequencing Requirements

11. CTP General specifications
11.1 CTP main feature

Item	Specification	Unit
Type	Transparent type projected capacitive touch panel	
Input mode	Human's finger	
Finger	2	
Active area	232.72(H)(typ.) X 126.28 (V) (typ.)	mm
Resolution	1024 x 600	dots
Transparency	>85　TYP　.AT550nm	%
Haze	<2	%
Report rate	Max. 75 (Single Touch)	Points/sec

11.2 CTP Absolute Maximum Rating

Symbol	Description	Min	Typ	Max	Unit	Notes
VCC1	Supply voltage	-0.3	-	6.5	V	
Vio	DC input voltage	-0.3	-	VCC1+0.3	V	

11.3 CTP Electrical Characteristic
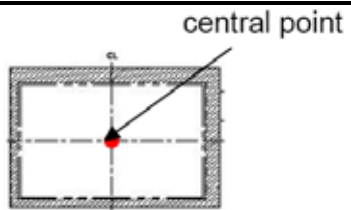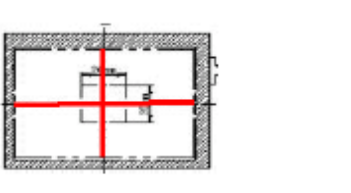
Symbol	Description	Min	Typ	Max	Unit	Notes
VCC1	Supply voltage	-	5.0	-	V	
GND	Supply voltage	-	0	-	V	
I	Supply current		60		mA	At VCC1=5.0V

11.4 CTP Pin Connections

No.	Name	I/O	Description
1	VCC1	P	Power; VCC1 =5.0V(typ.)
2	D-	Signal	USB Signal
3	D+	Signal	USB Signal
4	GND	P	Ground

Note：Interface protocol please refer to Universal Serial Bus Specification Revision 1.1

11.5 CTP Life Test

1	Point hitting life	> 1,000,000：Use 8 mm diameter silicon rubber/force 3N to knock on the same point twice per second (no-operating), after test function check pass.	
2	Line Drawing life (no contact CTP)	> 100,000：Use 11mm diameter/copper column to draw straight lines back and forth as the following red lines at the speed of 100mm/sec under system operating.	

12. Appearance Specification
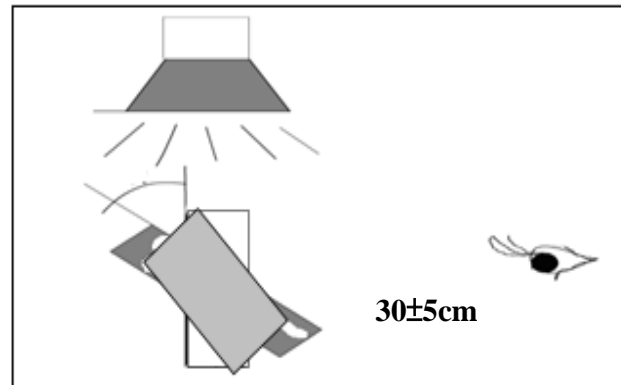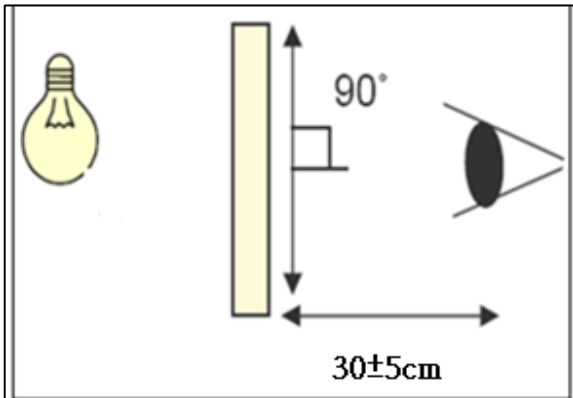
12.1 Inspection condition

    12.1.1 Inspection conditions

        12.1.1.1 Inspection Distance : 30 ± 5 cm

        12.1.1.2 View Angle :

            (1) Inspection that light pervious to the product: 90±15°

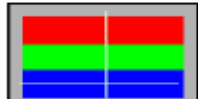   (2) Inspection that light reflects on the product: 90±15°
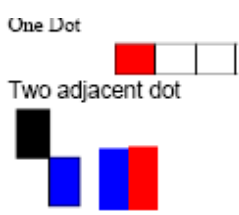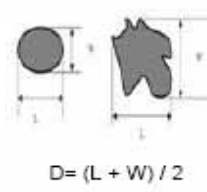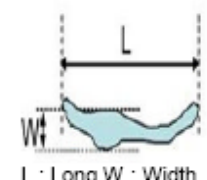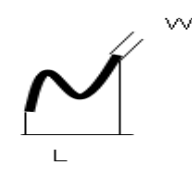
12.1.2 Environment conditions :
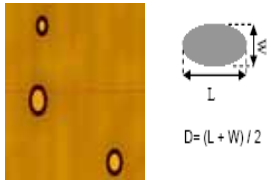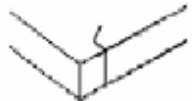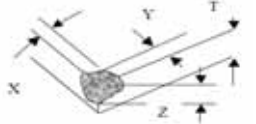
Ambient Temperature :	25±5℃
Ambient Humidity :	30~75%RH
Ambient Illumination	600~800 lux

12.2 Inspection Parameters

Appearance inspection standard (D: diameter, L: length; W: width, Z: height, T: glass thickness)

Inspection item	Inspection standard	Description
No image	Prohibited	
Image abnormal	Prohibited	
Bright line	Prohibited	
Thin line	It is acceptable that the defect can not be seen with 10% ND filter.	
Mura	It is acceptable that the defect can not be seen with 5% ND filter.	

Dot	Item	Acceptable Visible area	Total	
	Bright dot	3	6	
	Dark dot	5		
	Bright adjacent dots	1	1	
	Dark adjacent dots	2	2	
	Adjacent dots with a bright dot and a dark dot	2	2	

One Dot

Two adjacent dot

Foreign material in dot shape	SPEC (unit: mm)	Acceptable	
	D ≤ 0.5	Ignored	
	0.5<D ≤ 0.8, distance>5	n ≤ 5	
	D＞0.8	0	

D= (L + W) / 2

Foreign material in line shape	SPEC	Acceptable	
	W ≤ 0.05 and L ≤ 10	Ignored	
	0.05<W ≤ 0.1, L ≤ 10, distance >5	n ≤ 5	
	W>0.1 or L>10	0	

L : Long W : Width

Contamination	It is acceptable if the dirt can be wiped.		

Inspection item	SPEC	Description

Scratch	SPEC	Acceptable	
	W ≤ 0.05 and L ≤ 10	Ignored	
	0.05<W ≤ 0.08, L ≤ 10, distance >5	n ≤ 5	
	0.08<W ≤ 0.1, L ≤ 10, distance >5	n ≤ 3	
	W>0.1 or L>10	0	

Bubble	SPEC (unit: mm)	Acceptable	
	D ≤ 0.3	Ignored	
	Non visible area	Ignored	
	0.3<D ≤ 0.5, distance >5	n ≤ 5	
	D ≥ 0.5	0	
Cover & Sensor Crack	Prohibited		
Cover angle missing	SPEC (unit: mm)	Acceptable	
	Side/Bottom	Ignored	
	It is prohibited if the defect appears on the front.	0	
Cover edge break	SPEC (unit: mm)	Acceptable	
	X ≤ 3.0, Y ≤ 3.0, Z ≤ T	Ignored	
	X>3.0, Y>3.0, Z ≥ T	0	
Inspection item	SPEC		Description
Ink	SPEC (unit: mm)	Acceptable	
	word unclear, inverted, mistake, break line	0	
Bubble under protection film	SPEC (unit: mm)	Acceptable	
	NA		
Function	Prohibited		

12.3 Sampling Condition

Unless otherwise agree in written, the sampling inspection shall be applied to the incoming inspection of customer.

Lot size: Quantity of shipment lot per model.

Sampling type: normal inspection, single sampling

Sampling table: MIL-STD-105E

Inspection level: Level II

			Definition
Class of defects	**Major**	AQL 0.65%	It is a defect that is likely to result in failure or to reduce materially the usability of the product for the intended function.
	Minor	AQL 1.5%	It is a defect that will not result in functioning problem with deviation classified.

13. QUALITY ASSURANCE

13.1 Test Condition

13.1.1 Temperature and Humidity(Ambient Temperature)

Temperature : 25 ± 5°C

Humidity : 65 ± 5%

13.1.2 Operation

Unless specified otherwise, test will be conducted under function state.

13.1.3 Container

Unless specified otherwise, vibration test will be conducted to the product itself without putting it in a container.

13.1.4 Test Frequency

In case of related to deterioration such as shock test.   It will be conducted only once.

13.1.5 Test Method

No.	Reliability Test Item & Level Test Item	Test Level
1.	High Temperature Storage Test	T= 60 ,120hrs after 1 hrs at room temperature and test.
2.	Low Temperature Storage Test	T= -20 ,120hrs after 1 hrs at room temperature and test.
3.	High Temperature Operation Test	T= 50 ,120hrs after 24 hrs at room temperature and test.
4.	Low Temperature Operation Test	T= 0 ,120hrs after 24 hrs at room temperature and test.
5.	High Temperature and High Humidity Operation Test	T= 40 ,80%RH,120hrs after 24 hrs at room temperature and test.
6.	Thermal Cycling Test (No operation)	-20 30min ~ 60 30 min , 10 Cycles after 24 hrs at room temperature and test.
7.	Vibration Test (No operation)	Frequency :10 ~ 55 HZ Amplitude :1.5 mm Sweep time : 11 mins Test Period: 6 Cycles for each direction of X, Y, Z
8.	ESD TEST	Air Discharge : ±15 KV charge & discharge Indirect Contact Discharge : ±8KV charge & discharge

Note : The test samples have recovery time for 4 hours at room temperature before the function check. In the standard conditions, there is no any touch panel function NG issue occurred.

14. CTP LCM PRODUCT LABEL DEFINE

CTP LCM Product Label style:

BarCode Define:

AA6 0014 2 10 26-0013

→ Serial number of the products
Serial number starts from 0000

→ Week of production

→ Year of production

→ Storage area

→ Serial number of work order
Serial number starts from 0000 each month

→ Month of work order

→ Year of work order

→ The first 3 numbers of work order

Product Name Define:

SC F 1001 32U G G U 01

Serial Number:01

Material of Glue

　　N : None

　　U : UV

　　C : OCA

　　R : Other

Material of Cover Lens

　　N : None

　　G : Glass

　　P : PMMA

　　C : PC

　　E : PET

　　R : Other

Material of Sensor

　　G : Glass

　　F : Film

　　R : Other

IC Number

　　32U : 32U

Size

　　1001 :10.1 inch

Module Type

　　N : None LCM

　　F : Standard CTP Module

　　X : Custom CTP Module

Capacitive Touch Panel

15.PRECAUTIONS IN USE LCM

1.   LIQUID CRYSTAL DISPLAY (LCD)

LCD is made up of glass, organic sealant, organic fluid, and polymer based polarizers. The following precautions should be taken when handing,

(1). Keep the temperature within range of use and storage. Excessive temperature and humidity could cause polarization degradation, polarizer peel off or bubble.

(2). Do not contact the exposed polarizers with anything harder than an HB pencil lead.   To clean dust off the display surface, wipe gently with cotton, chamois or other soft material soaked in petroleum benzin.

(3). Wipe off saliva or water drops immediately. Contact with water over a long period of time may cause polarizer deformation or color fading, while an active LCD with water condensation on its surface will cause corrosion of ITO electrodes.

(4). Glass can be easily chipped or cracked from rough handling, especially at corners and edges.

(5). Do not drive LCD with DC voltage.

2.   Liquid Crystal Display Modules

2.1   Mechanical Considerations

LCM are assembled and adjusted with a high degree of precision. Avoid excessive shocks and do not make any alterations or modifications. The following should be noted.

(1). Do not tamper in any way with the tabs on the metal frame.

(2). Do not modify the PCB by drilling extra holes, changing its outline, moving its components or modifying its pattern.

(3). Do not touch the elastomer connector, especially insert an backlight panel (for example, EL).

(4). When mounting a LCM make sure that the PCB is not under any stress such as bending or twisting . Elastomer contacts are very delicate and missing pixels could result from slight dislocation of any of the elements.

(5). Avoid pressing on the metal bezel, otherwise the elastomer connector could be deformed and lose contact, resulting in missing pixels.

2.2.   Static Electricity

LCM contains CMOS LSI's and the same precaution for such devices should apply, namely

(1). The operator should be grounded whenever he/she comes into contact with the module. Never touch any of the conductive parts such as the LSI pads, the copper leads on the PCB and the interface terminals with any parts of the human body.

(2). The modules should be kept in antistatic bags or other containers resistant to static for storage.

(3). Only properly grounded soldering irons should be used.

(4). If an electric screwdriver is used, it should be well grounded and shielded from commutator sparks.

(5) The normal static prevention measures should be observed for work clothes and working benches; for the latter conductive (rubber) mat is recommended.

(6). Since dry air is inductive to statics, a relative humidity of 50-60% is recommended.

2.3   Soldering

(1). Solder only to the I/O terminals.

(2). Use only soldering irons with proper grounding and no leakage.

(3). Soldering temperature : $280°C \pm 10°C$

(4). Soldering time: 3 to 4 sec.

(5). Use eutectic solder with resin flux fill.

(6). If flux is used, the LCD surface should be covered to avoid flux spatters. Flux residue should be removed after wards.

2.4   Operation

(1). The viewing angle can be adjusted by varying the LCD driving voltage V0.

(2). Driving voltage should be kept within specified range; excess voltage shortens display life.

(3). Response time increases with decrease in temperature.

(4). Display may turn black or dark blue at temperatures above its operational range; this is (however not pressing on the viewing area) may cause the segments to appear "fractured".

(5). Mechanical disturbance during operation (such as pressing on the viewing area) may cause the segments to appear "fractured".

2.5 Storage

If any fluid leaks out of a damaged glass cell, wash off any human part that comes into contact with soap and water. Never swallow the fluid. The toxicity is extremely low but caution should be exercised at all the time.

2.6   Limited Warranty

Unless otherwise agreed between DATA IMAGE and customer, DATA IMAGE will replace or repair any of its LCD and LCM which is found to be defective electrically and visually when inspected in accordance with DATA IMAGE acceptance standards, for a period on one year from date of shipment. Confirmation of such date shall be based on freight documents.   The warranty liability of DATA IMAGE is limited to repair and/or replacement on the terms set forth above. DATA IMAGE will not responsible for any subsequent or consequential events.

16.OUTLINE DRAWING

PRELIMINARY

10.1" 1024*RGB*600

NOTE:
1. For RoHS.
2. Tolerance is ±0.3 unless otherwise noted.
3. * is important dimension.
4. 5 points average brightness: 170 cd/m² (Typ.) , Uniformity: 80% min.(5points)
5. TFT 40Pin connector is UJU ISO50−L40B−C10 or equivalent.
6. CTP connector :Econn(WB0801UR−04T5) or equivalent

4 PIN FUNCTION

1	VCC1
2	D−
3	D+
4	GND

LCM PIN FUNCTIONS

1. GND	11. RIN1−	21. NC	31. VLED_GND
2. VDD	12. RIN1+	22. GND	32. VLED_GND
3. VDD	13. GND	23. NC	33. VLED_GND
4. VEDID	14. RIN2−	24. NC	34. NC
5. BIST	15. RIN2+	25. GND	35. VPWM_EN
6. CLK_EDID	16. GND	26. NC	36. VLED_EN
7. DAT_EDID	17. CLKN−	27. NC	37. NC
8. RIN0−	18. CLKN+	28. GND	38. VLED
9. RIN0+	19. NC	29. NC	39. VLED
10. GND	20. NC	30. NC	40. VLED

AUTH	DESCRIPTION		DATE	APPROVED
⚠	Add Mylar (KPT201) .	<<ECR 11S−CB0020>>	2012/11/19	
⚠	Modify the Gasket thickness .	<<ECR 11S−C90010>>	2012/09/07	
⚠	Change FPC & Sensor type & Note & Cover Lens O.D.		2012/01/09	
	ESR 0101005			

REVISIONS

DATE:	01/25/2011	TITLE: 10.1" Module with CTP
DRAWN:		
CHECK:		DWG. NO. SCF100132UGGU01
APPROVE:		UNITS M M REV. 4
		SCALE Scale SHEET 1 OF 1

17. PACKAGE INFORMATION

EPE(15MM)
Antirust
Drier
Cover tray
(Antistatic tray)

EPE

PANEL

Antistatic tray

EPE(15MM)

Inner box

Inner box

Outside the box
Form

Material

1Outside the box + 2 Inner box + 2Anti-static bag + 5 EPE (15mm)
  + 14Anti-static tray +12 EPE+ 2 Drier+2Antirust

Total pcs

1 Antistatic tray =2 pcs panel=1PCS EPE
1 Anti-static bag = 6 Anti-static tray + cover tray = 6*2 +0 = 12 pcs
1 Inner box = 1 Anti-static bag + 2 EPE(15MM) =1*12 = 12 pcs
1 Outside the box = 2 Inner box = 2*12 = 24 pcs

Carton size : 465L x 380W x 395H (mm)

Item	Size(L*W*H)	Quantity	Note
Master Carton	465*380*395	1	
Quantity Per Master Carton		24	
N . W	7.78 (kg)	G . W	10.7 (kg)