DATA IMAGE CORPORATION

TFT Module Specification

Preliminary

ITEM NO.: FG0700GEDUSWMG01

Table of Contents

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

Rev	Date	Item	Page	Comment
1	17/OCT/13’			Initial PRELIMINARY

3. GENERAL SPECIFICATIONS

Parameter	Specifications	Unit
Screen Size	7 (diagonal)	inch
Display Format	800 (H) x (R,G,B) x 480 (V)	dot
Active Area	152.4 (H) x 91.44(V)	mm
Dot Pitch	0.0635 (H) x 0.1905 (V)	mm
Pixel Configuration	Stripe	
Outline Dimension	165 (W) x 106.4 (H) x8.0 (D) Max	mm
Surface treatment	Anti-glare	
Back-light	LED	
Display mode	Normally white	
Weight	142	g
View Angle direction	ALL	

4. ABSOLUTE MAXIMUM RATINGS

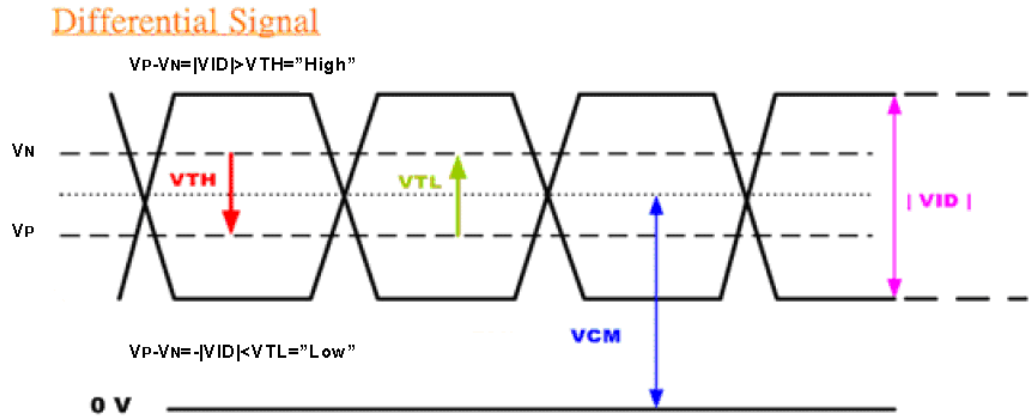
Parameter		Symbol	MIN.	MAX.	Unit	Remark
Power supply voltage		Vcc	-0.3	6.0	V	Ta=25℃
Logic input voltage		VI	-0.3	V_{CC}+0.3	V	
Operating temperature		Top	-20	+70	℃	Module surface*
Storage temperature		Tst	-30	+80	℃	-
Humidity	Operation	20%~90% relative humidity				Ta<=60℃
	Non Operation	5%~90% relative humidity				Ta<=60℃

5. ELECTRICAL CHARACTERISTICS

fH=31.5KHz, fv=60Hz, fCLK=33.26MHz,Ta=25°C

Parameter	Symbol	MIN.	Typ.	MAX.	Unit	Remark
Power Supply voltage for LCD	V_{CC}	+3.0	+3.3	+3.6	V	
Power Supply Current for LCD	I_{CC}		180	240	mA	V_{CC} =3.3V
Power Supply voltage for LED	VDD	4.5	5	5.5	V	
Power Supply Current for LED	IDD		650	850	mA	V_{DD} =5.0V
Ripple voltage	V_{RF}	-	-	100	mV_{P-P}	
ADJ frequency		19K	20K	21K	Hz	
ADJ input voltage	VIH	3.0	-	3.3	V	
	VIL	0	-	0.3	V	
Differential Input High Threshold	VTH	-	-	100	[mV]	VCM=1.2V Note 1
Differential input Low Threshold	VTL	-100	-	-	[mV]	
LED dice life time		15000	-		Hr	Note 2

Note 1: LVDS Signal Waveform.



Note 2: The "LED dice life time" is defined as the brightness decrease to 50% original brightness that the ambient temperature is 18℃~28℃ and LED dice current=25mA.

6. INPUT SIGNAL CHARACTERISTICS

6.1 AC Characteristics

6.1.1 AC Electrical Characteristics

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Data setup time	T_{dsu}	6	-	-	ns
Data hold time	T_{dhd}	6	-	-	ns
DE setup time	T_{esu}	6	-	-	ns

6.1.2 Resolution：800x480

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
DCLK frequency	F_{CPH}	25	33.26	40	MHz
DCLK period	T_{CPH}	25	30.06	40	ns
DCLK pulse duty	T_{CWH}	40	50	60	%
DE period	$T_{DEH}+T_{DEL}$	1000	1056	1200	T_{CPH}
DE pulse width	T_{DEH}	800	800	800	T_{CPH}
DE frame blanking	T_{DEB}	10	45	110	$T_{DEH}+T_{DEL}$
DE frame width	T_{DE}	480	480	480	$T_{DEH}+T_{DEL}$

6.2 Timing Controller Timing Chart

6.2.1 Clock and Data input waveforms

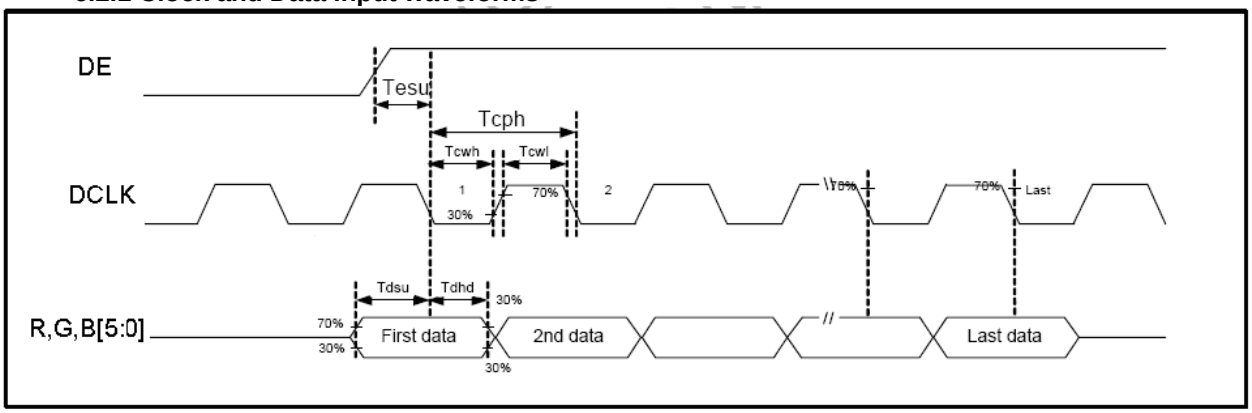
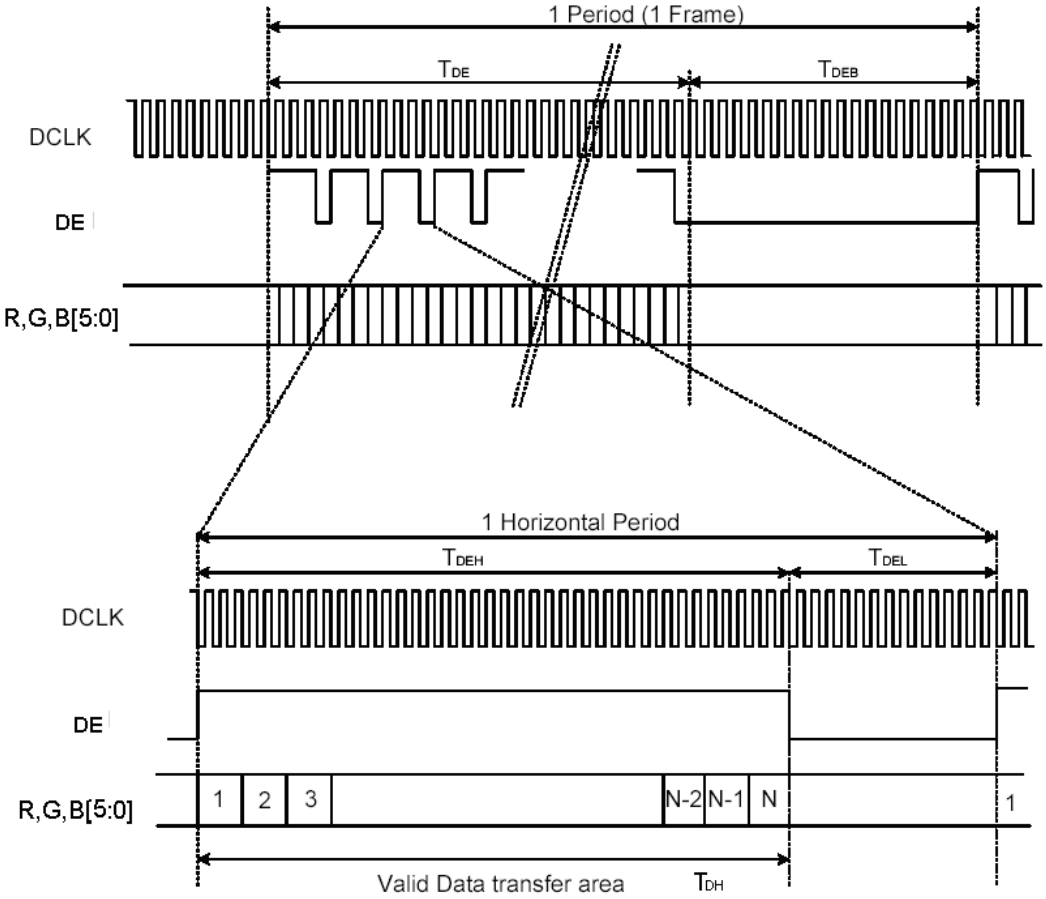
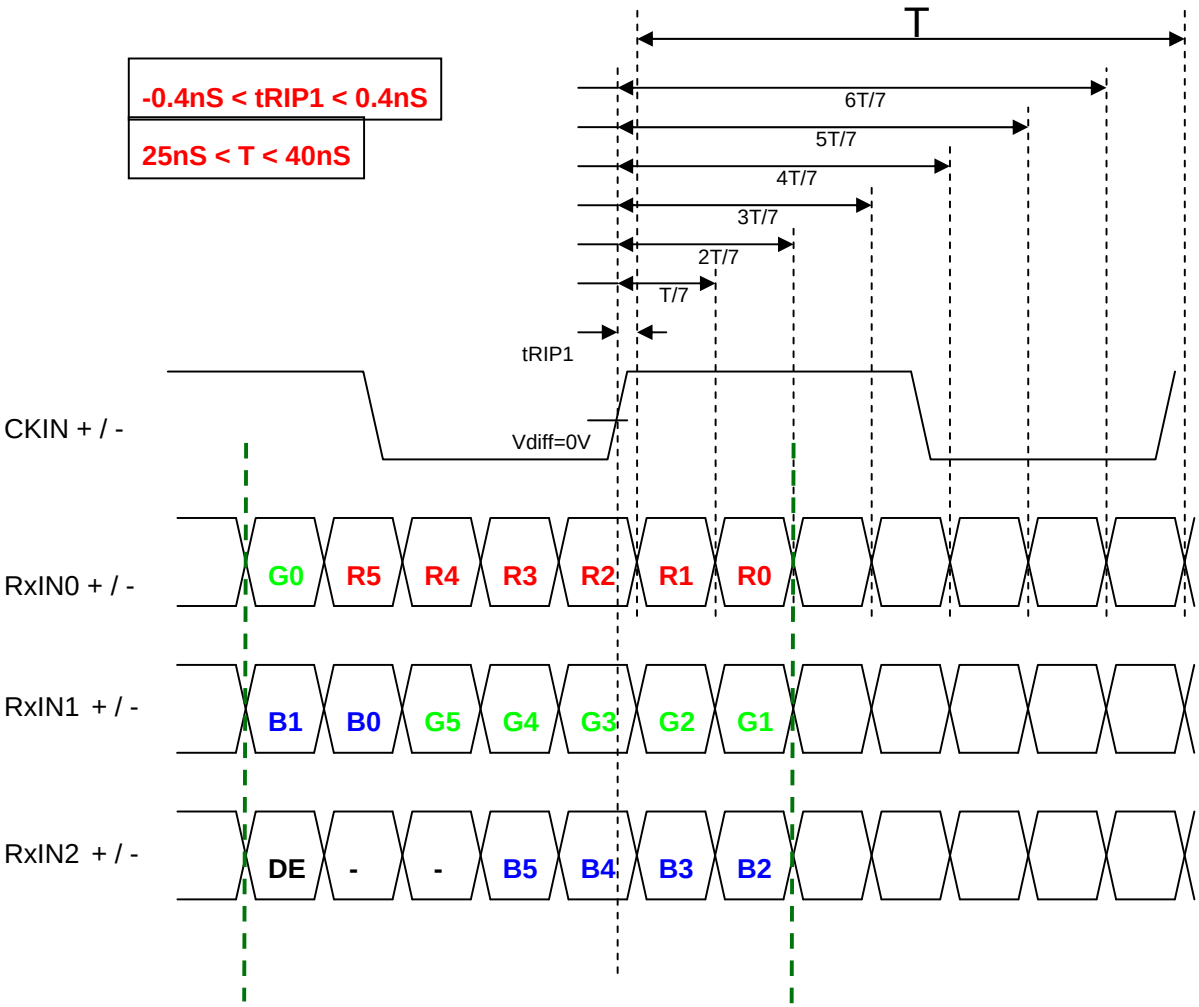


Figure 1 Clock and Data input waveforms.


1 Period (1 Frame)
TDE
TDEB
DCLK
DE
R,G,B[5:0]
1 Horizontal Period
TDEH
TDEL
DCLK
DE
R,G,B[5:0]
1
2
3
N-2
N-1
N
1
Valid Data transfer area
TDH

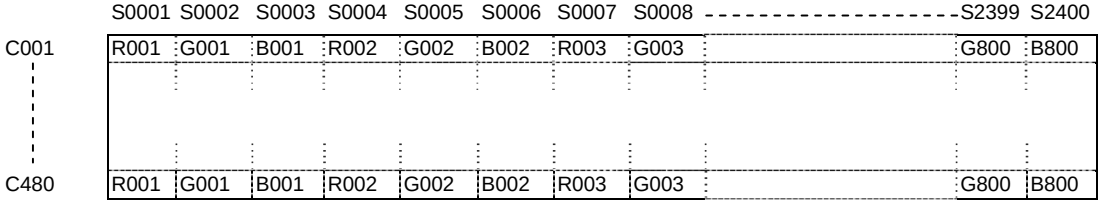
6.2.2 LVDS Timing Chart



6.3 Color Data Input Assignment

Color		Data Signal																	
		Red						Green						Blue					
		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
	Red	1	1	1	1	1	1	0	0	0	0	0	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
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
	Cyan	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
	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	Red(0) / Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(1)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	Red(2)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Red(61)	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	Red(62)	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(63)	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Gray Scale of Green	Green(0)/ Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Green(1)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	Green(2)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Green(61)	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0
	Green(62)	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0
	Green(63)	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
Gray Scale of Blue	Blue(0)/ Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Blue (1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Blue (2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Blue (61)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1
	Blue (62)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0
	Blue (63)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1

Correspondence between Data and Display Position

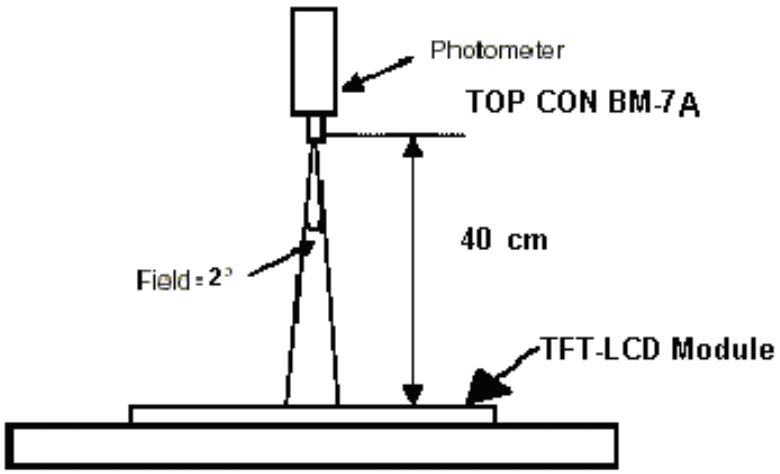


7. OPTICAL CHARACTERISTIC

Parameter		Symbol	Condition	MIN.	TYP.	MAX.	Unit	Remarks
Viewing Angle	Horizontal	θ_x+	Center CR≥10	70	80	--	deg	Note 1,4
		θ_x-		70	80	--		
	Vertical	θ_Y+		70	80	--		
		θ_Y-		70	80	--		
Contrast Ratio		CR	at optimized viewing angle	300	400	--		Note 1,3
Response time	Rise	Tr	Center θx=θy =0°	-	5	10	ms	Note 1,6
	Fall	Tf		-	15	20	ms	
Uniformity		B-uni	θx=θy =0°	70	80	--	%	Note1,5
Brightness		L	θx=θy =0°	400	500	--	cd/㎡	Note 1,2
Chromaticity		x_W	Center θx=θy =0°	TYP-0.05	0.302	TYP+0.05		Note 1,7
		y_W			0.339			
		x_R			0.575			
		y_R			0.360			
		x_G			0.331			
		y_G			0.571			
		x_B			0.149			
		y_B			0.138			
Image sticking		tis	2 hours			2	Sec	Note 8

The following optical specifications shall be measured in a darkroom or equivalent state (ambient luminance ≤1 lux, and at room temperature). The operation temperature is 25°C±2°C and LED Backlight Current=250mA. The measurement method is shown in Note1.

Note1: The method of optical measurement:

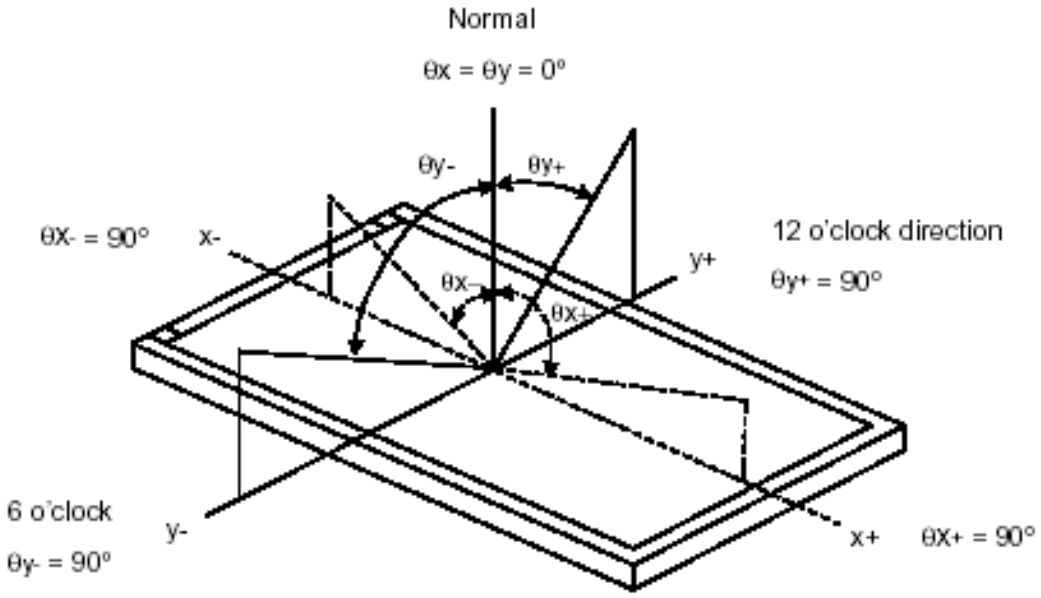


Note2: Measured at the center area of the panel and at the viewing angle of the $\theta x=\theta y=0°$

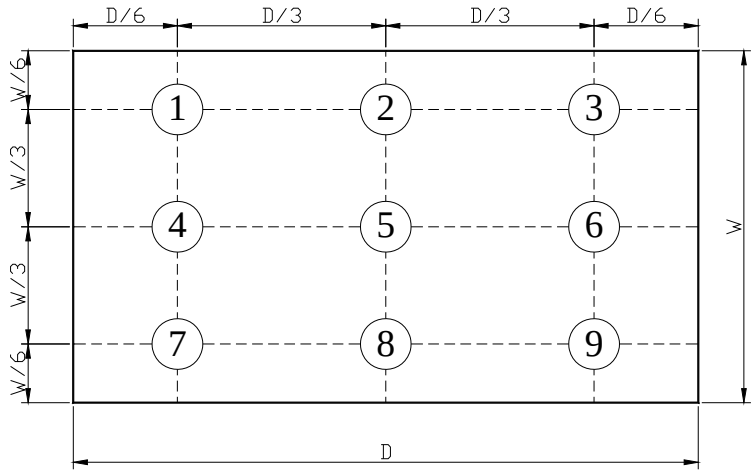
Note3: Definition of Contrast Ratio (CR):

$$CR = \frac{\text{Luminance with all pixels in white state}}{\text{Luminance with all pixels in Black state}}$$

Note4: Definition of Viewing Angle



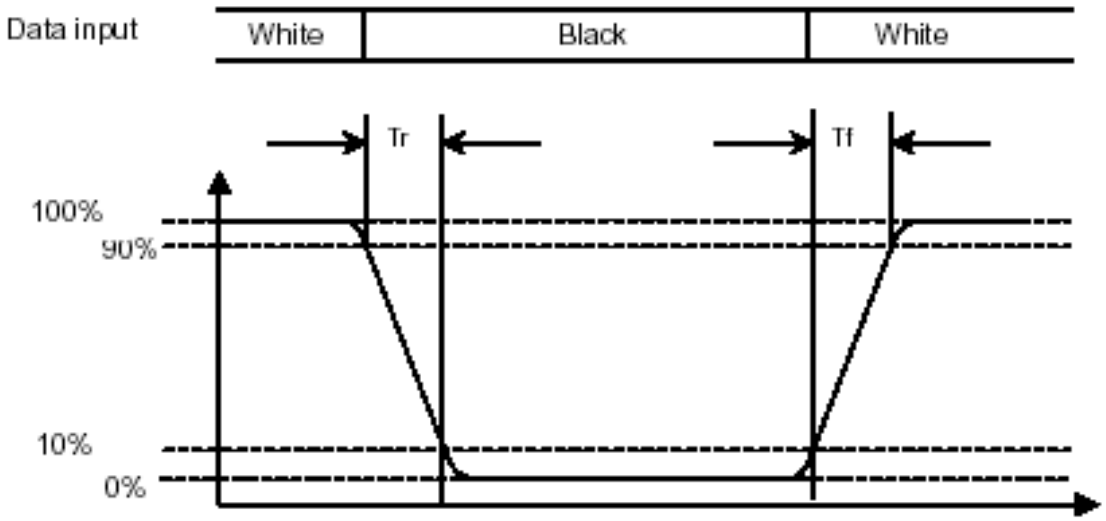
Note 5: Definition of Brightness Uniformity (B-uni):



$$\text{B-uni} = \frac{\text{Minimum luminance of 9 points}}{\text{Maximum luminance of 9points}} \quad \text{(Note 5).}$$

Note6: Definition of Response Time:

The Response Time is set initially by defining the “Rising Time (Tr)” and the “Falling Time (Tf)” respectively. Tr and Tf are defined as following figure.



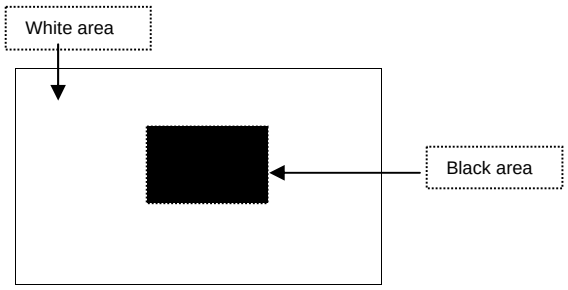
Note 7: Definition of Chromaticity:

The color coordinates (x_W,y_W),(x_R,y_R),(x_G,y_G),and (x_B,y_B) are obtained with all pixels in the viewing field at white, red, green, and blue states, respectively.

Note 8: Definition of Image sticking (tis):

Continuously display the test pattern shown in the figure below for 2 hours. Then display a completely white screen. The previous image shall not persist more than 2 sec at 25 °C

Image sticking pattern



8. PIN CONNECTIONS

Pin No	Symbol	Function	Remark
1	VCC	power supply for Digital Circuit	
2	VCC	power supply for Digital Circuit	
3	GND	Ground	
4	GND	Ground	
5	RxIN0-	Differential Data Input ,CH0(Negative)	
6	RxIN0+	Differential Data Input ,CH0(Positive)	
7	GND	Ground	
8	RxIN1-	Differential Data Input ,CH1(Negative)	
9	RxIN1+	Differential Data Input ,CH1(Positive)	
10	GND	Ground	
11	RxIN2-	Differential Data Input ,CH2(Negative)	
12	RxIN2+	Differential Data Input ,CH2(Positive)	
13	GND	Ground	
14	CKIN-	Differential Clock Input (Negative)	
15	CKIN+	Differential Clock Input (Positive)	
16	GND	Ground	
17	VDD	Power Supply for LED Driver Circuit	
18	VDD	Power Supply for LED Driver Circuit	
19	GND	Ground	
20	ADJ	Brightness control for LED B/L	

Remarks：
1) ADJ is brightness control Pin. The larger of the pulse duty is, the higher of the brightness.
2) ADJ signal is 0~3.3V.Operation frequency is 20KHz
3) GND PIN must be grounding, can not be floating.

Remarks:

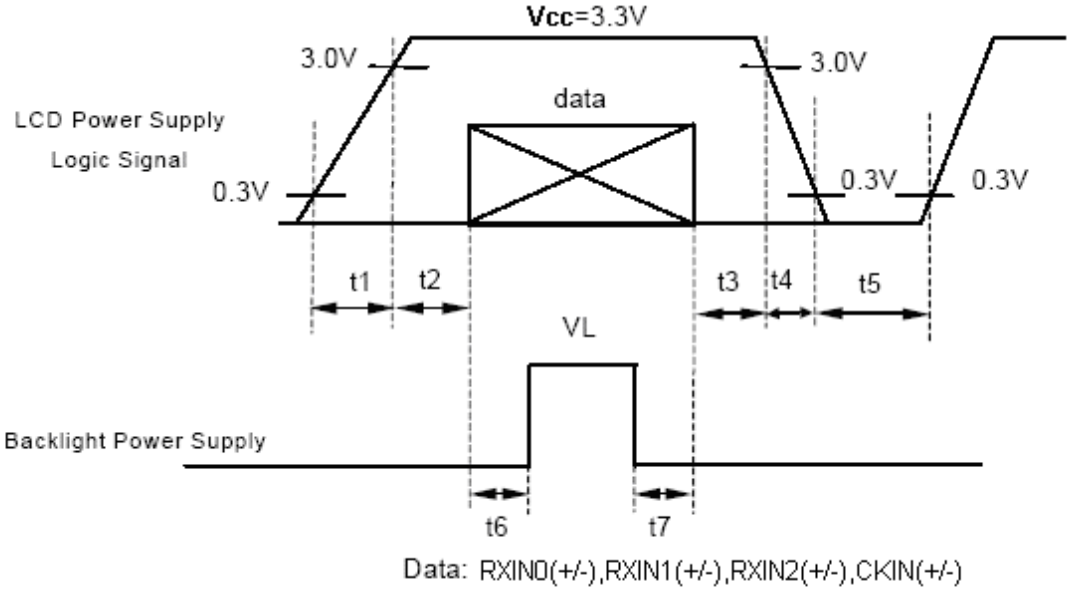
Power Signal sequence:

t1 ≤10ms ; 1 sec≤ t5

50ms≤ t2 ; 200ms ≤t6

0<t3 ≤50ms ; 200ms≤ t7

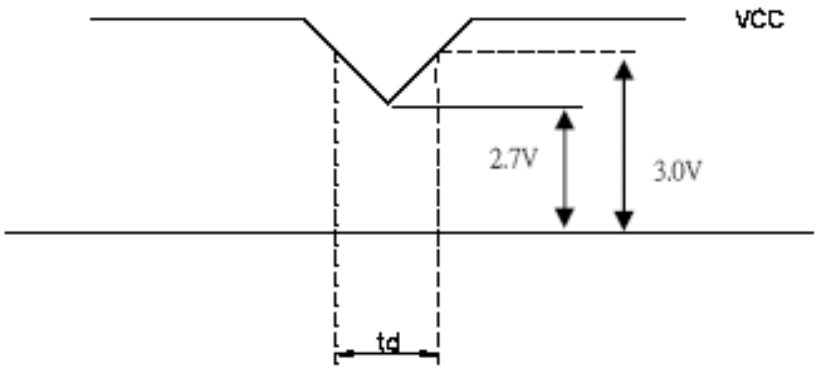
0<t4 ≤10ms



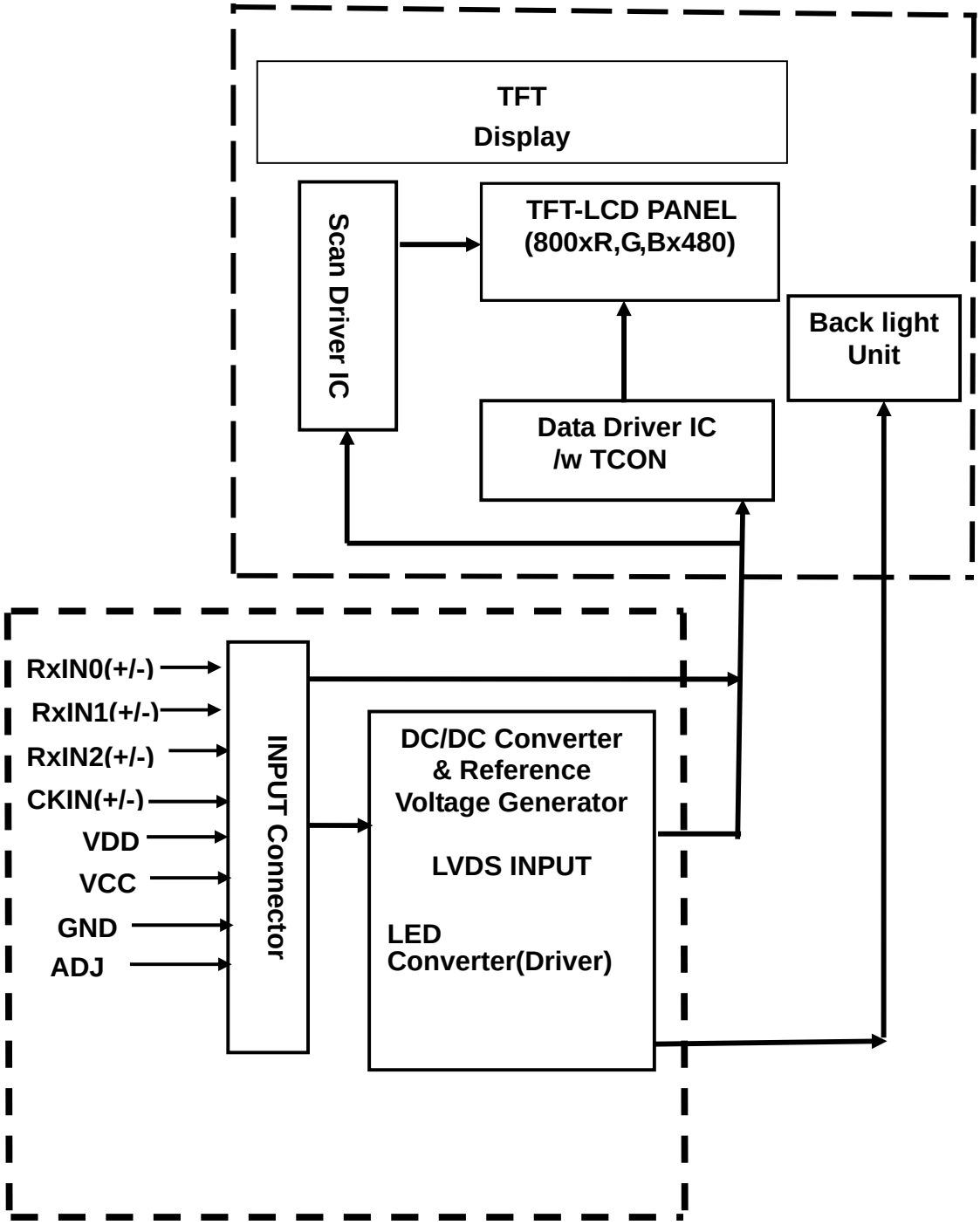
VCC-dip condition:

(1) 2.7 V ≤VCC <3.0V,td ≤ 10 ms

(2) VCC>3.0V,VCC-dip condition should be the same with VCC-turn-on condition。



9. BLOCK DIAGRAM



10. QUALITY ASSURANCE

10.1 Test Condition

10.1.1 Temperature and Humidity(Ambient Temperature)

Temperature : 25 ± 5°C
Humidity : 65 ± 5%

10.1.2 Operation

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

10.1.3 Container

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

10.1.4 Test Frequency

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

10.1.5 Test Method

Reliability Test Item & Level		Test Level	Remark
No.	Test Item		
1	High Temperature Storage Test	T=80℃,240hrs	IEC68-2-2
2	Low Temperature Storage Test	T=-30℃,240hrs	IEC68-2-1
3	High Temperature Operation Test	T=70℃,240hrs	IEC68-2-2
4	Low Temperature Operation Test	T=-20℃,240hrs	IEC68-2-1
5	High Temperature and High Humidity Operation Test	T=60℃,90%RH,240hrs	IEC68-2-3
6	Thermal Cycling Test (No operation)	-30℃ → +25℃ → +80℃, 100 Cycles 30 min 5 min 30 min	IEC68-2-14
7	Vibration Test (No operation)	Frequency :10 ~ 55 H_Z Amplitude :1.5 mm Sweep time : 11 mins Test Period: 6 Cycles for each direction of X, Y, Z	IEC68-2-6

10.2 Inspection condition

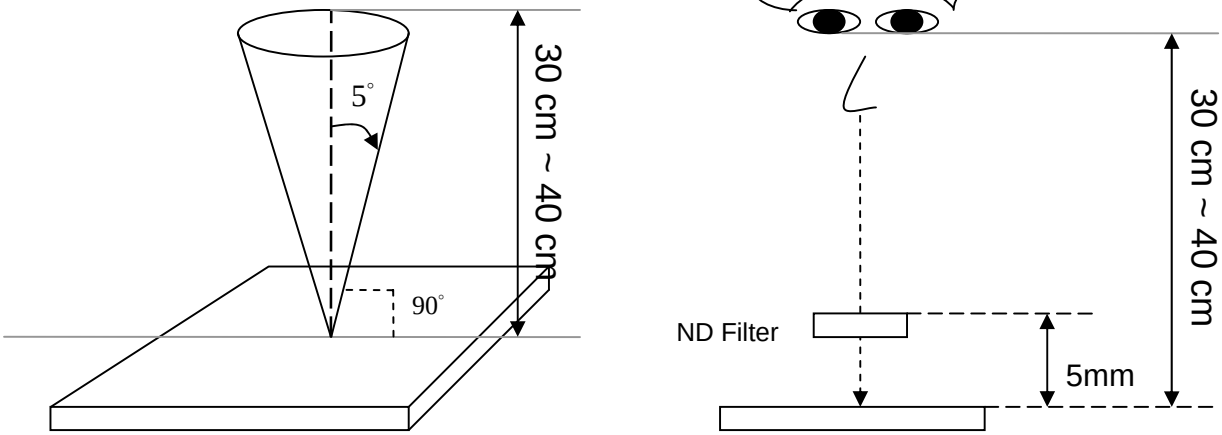
10.2.1 Inspection conditions

10.2.1.1 Inspection Distance : 35 ± 5 cm

10.2.1.2 View Angle :

(1) Inspection under operating condition : ±5°

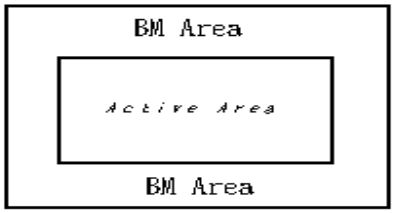
(2) Inspection under non-operating condition : ± 45°



10.2.2 Environment conditions :

Ambient Temperature :		25±5℃
Ambient Humidity :		65±5%
Ambient Illumination	Cosmetic Inspection	400 ~ 600lux
	Functional Inspection	300 ~ 500lux

10.2.3 Definition of applicable Zones



10.2.4 Inspection Parameters

<table>
<tr><th>No.</th><th>Parameter</th><th>Criteria</th></tr>
<tr><td rowspan="5">1</td><td rowspan="5">Operating</td><td>Display function: No Display malfunction (Major)</td></tr>
<tr><td>Line Defect: No obvious Vertical and Horizontal line defect in bright, dark and colored. (Major) (Note:1)</td></tr>
<tr><td>Point Defect (Red, green, blue, dark): Active area ≤5dots (Minor)(Note:1)
<table>
<tr><th>Item</th><th>Acceptable number</th><th>Total</th><th>Class Of Defects</th><th>AQL Level</th></tr>
<tr><td>Bright</td><td>4</td><td rowspan="2">8</td><td rowspan="3">Minor</td><td rowspan="3">1.5</td></tr>
<tr><td>Dark</td><td>4</td></tr>
<tr><td>Adjacent Bright</td><td>1</td><td>1</td></tr>
<tr><td>Adjacent Dark</td><td>2</td><td>2</td></tr>
</table></td></tr>
<tr><td>Non-uniformity:
Visible through 6%ND filter white, R, G, B and gray 50%pattern. (Minor)</td></tr>
<tr><td>Foreign material in Black or White spots shape (W>1/4L) (Note: 5)
<table>
<tr><th>Dimension</th><th>Acceptable number</th><th>Class Of Defects</th><th>AQL Level</th></tr>
<tr><td>D ≤ 0.3</td><td>*</td><td rowspan="3">Minor</td><td rowspan="3">1.5</td></tr>
<tr><td>0.3 < D ≤0.5</td><td>4</td></tr>
<tr><td>D> 0.5</td><td>0</td></tr>
</table>
D = (Long + Short) / 2 ＊: Disregard</td></tr>
<tr><td>Foreign Material in Line or spiral shape (W≤1/4L) (Note: 4)
<table>
<tr><th>Dimension</th><th>Acceptable number</th><th>Class Of Defects</th><th>AQL Level</th></tr>
<tr><td>W>0.1mm,L>10mm</td><td>0</td><td rowspan="3">Minor</td><td rowspan="3">1.5</td></tr>
<tr><td>L≦10mm,0.07mm<W≦0.1mm</td><td>4</td></tr>
<tr><td>L≦10mm,W<0.07mm</td><td>*</td></tr>
</table>
L : Length W : Width ＊: Disregard</td></tr>
<tr><td rowspan="5">2</td><td rowspan="5">External Inspection (non-operating)</td><td>Dimension: Outline (Major)</td></tr>
<tr><td>Bezel appearance: uneven (Minor)</td></tr>
<tr><td>Scratch on the polarizel: (Note:2)
<table>
<tr><th>Dimension</th><th>Acceptable number</th><th>Class Of Defects</th><th>AQL Level</th></tr>
<tr><td>W>0.1mm,L>5mm</td><td>0</td><td rowspan="3">Minor</td><td rowspan="3">1.5</td></tr>
<tr><td>L≦5mm,0.07mm<W≦0.1mm</td><td>4</td></tr>
<tr><td>L≦5mm,W<0.07mm</td><td>*</td></tr>
</table>
L : Length W : Width ＊: Disregard</td></tr>
<tr><td>Dent and spots shape on the polarize (Note:2): (Note: 5)
<table>
<tr><th>Dimension</th><th>Acceptable number</th><th>Class Of Defects</th><th>AQL Level</th></tr>
<tr><td>D ≤ 0.3</td><td>*</td><td rowspan="3">Minor</td><td rowspan="3">1.5</td></tr>
<tr><td>0.3 < D ≤0.5</td><td>4</td></tr>
<tr><td>D> 0.5</td><td>0</td></tr>
</table>
D = (Long + Short) / 2 ＊: Disregard</td></tr>
</table>

			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.

Note:1.(a)Bright point defect is defined as point defect of R,G,B with area >1/2 dot respectively

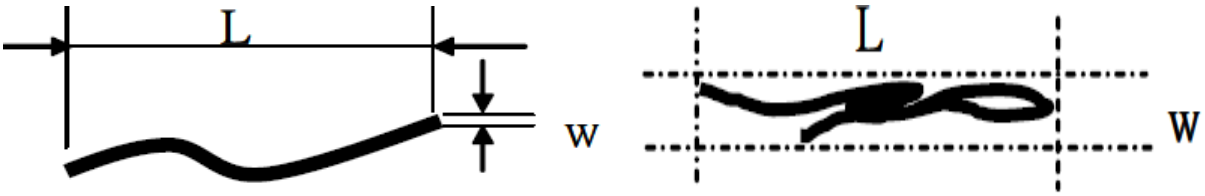
(b)Dark point defect is defined as visible in full white pattern.

(c)The point defect must under 6% ND Filter visible .

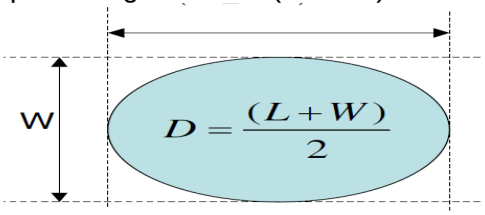
Note:2 The external inspection should be conducted at the distance 35± 5cm between the eyes of inspctor and thepanel .

Note:3 Luminance measurement for contrast ratio is at the distance 50± 5cm between the detective head and the panel with ambient illuminance less than 1 lux. Contrast ratio is obtained at optimum view angle.

Note:4 W-Width in mm , L-length of Max.(L1,L2) in mm.



Note:5 Spot Foreign Material (W≧L/4)

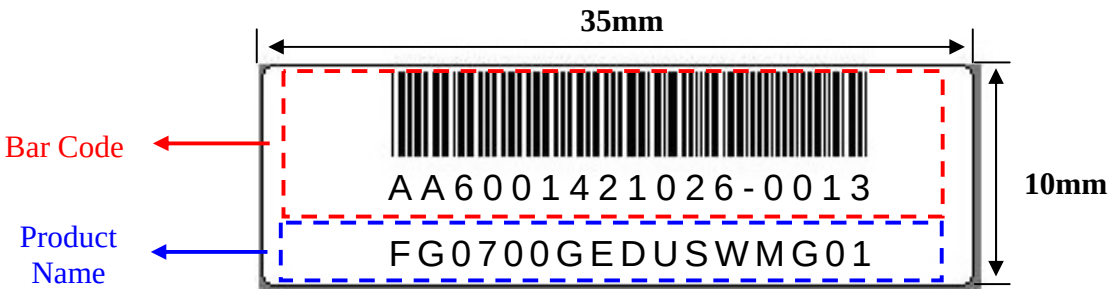


10.3 Sampling Condition

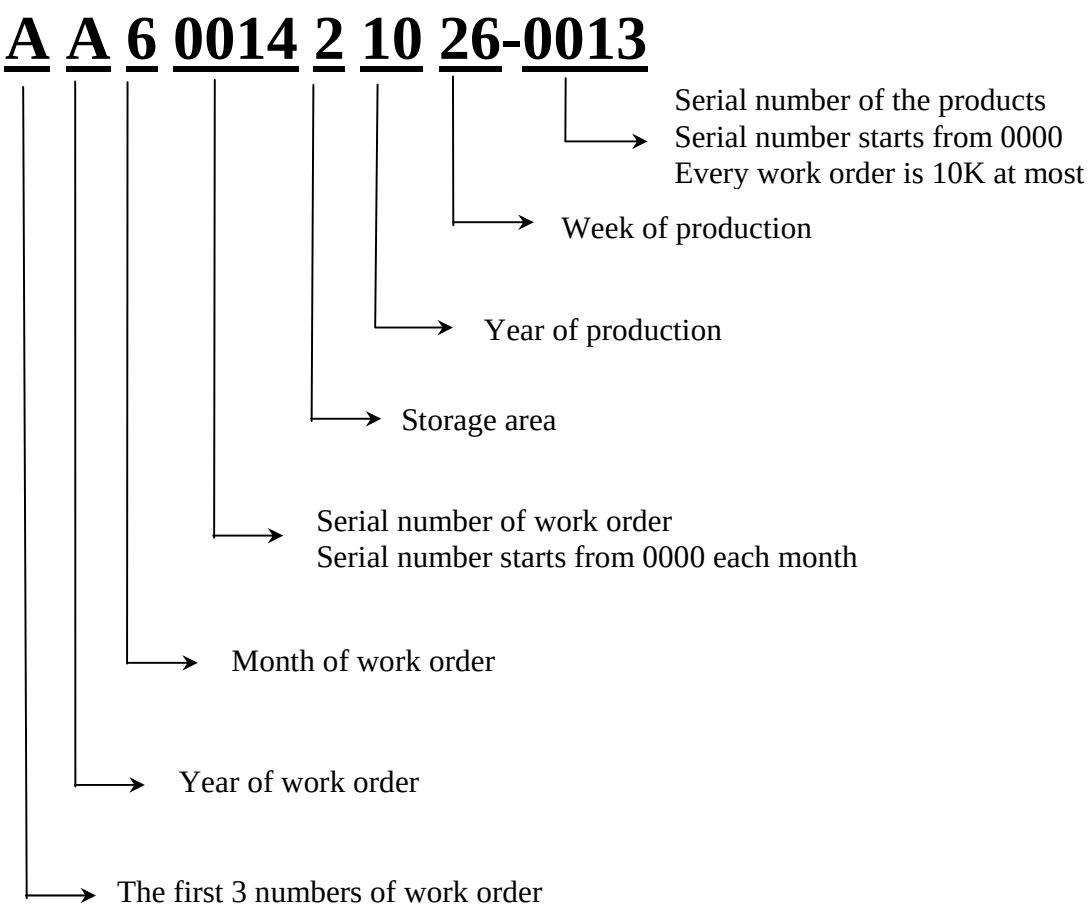
Unless otherwise agree in written, the sampling inspection shall be applied to the incoming inspection of customer.
Lot size: Quantity of shipment lot per model.
Sampling type: normal inspection, single sampling
Sampling table: MIL-STD-105E
Inspection level: Level II

11. LCM PRODUCT LABEL DEFINE

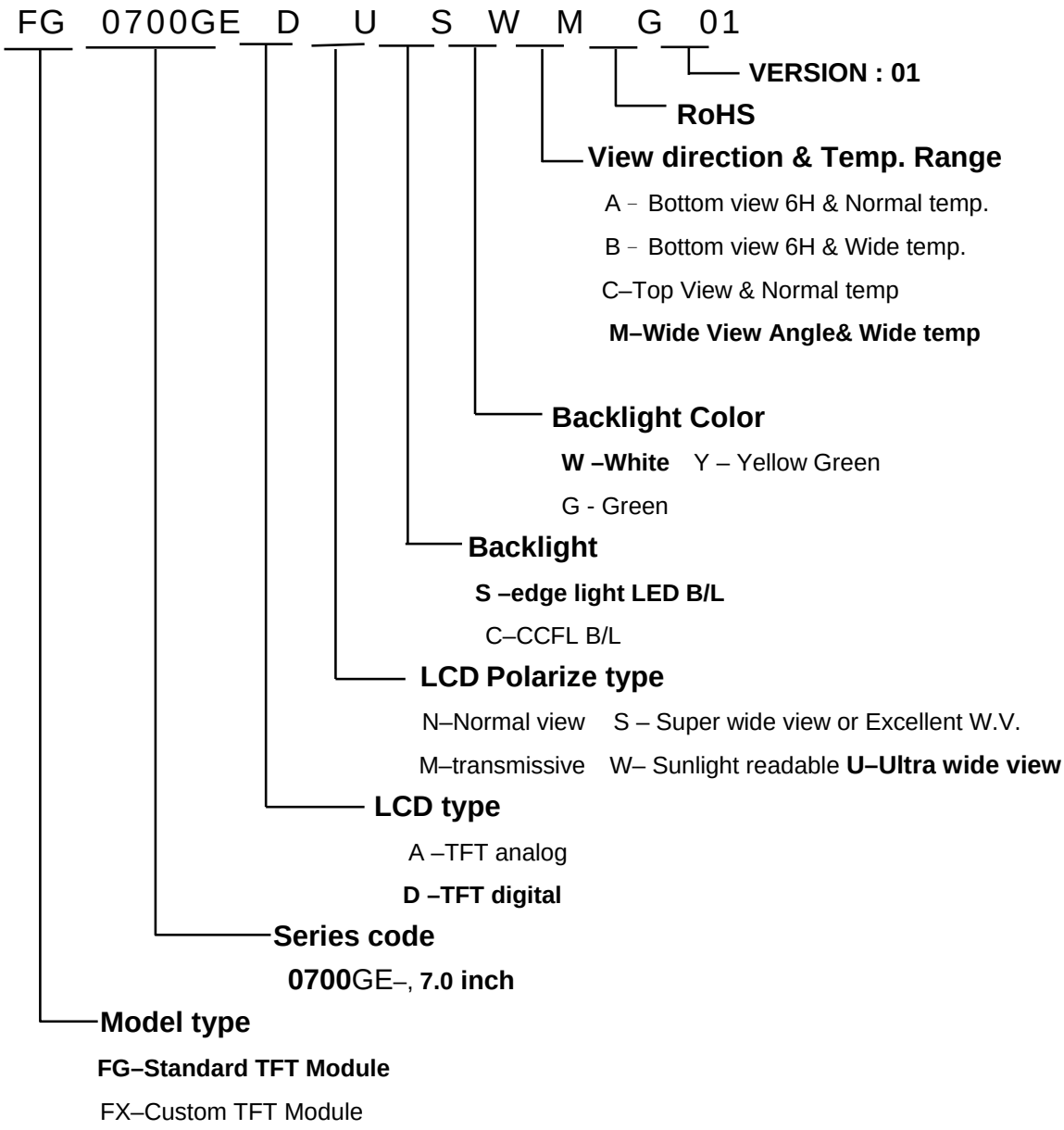
Product Label style:



BarCode Define:



Product Name Define:



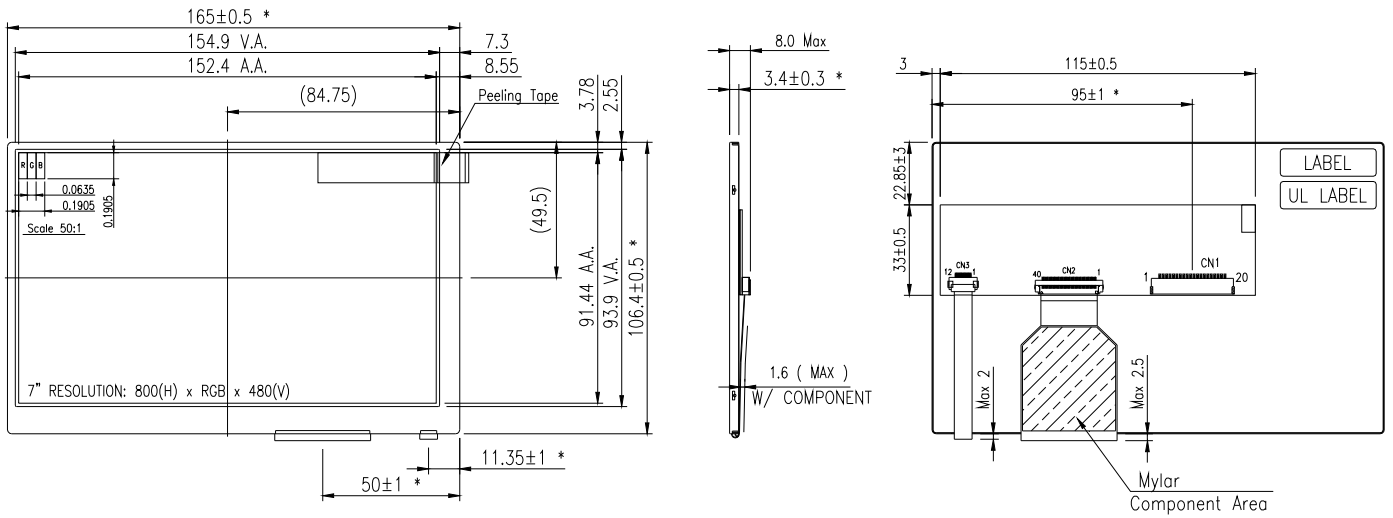
12. PRECAUTIONS IN USE LCM

1. ASSEMBLY PRECAUTIONS
   (1) You must mount a module using holes arranged in four corners or four sides.
   (2) You should consider the mounting structure so that uneven force (ex. Twisted stress) is not applied to the module. And the case on which a module is mounted should have sufficient strength so that external force is not transmitted directly to the module.
   (3) Do not touch, push or rub the exposed polarizers with glass, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment.
   (4) Wipe off saliva or water drops as soon as possible. Their long time contact with polarizer causes deformations and color fading.
   (5) Do not open the case because inside circuits do not have sufficient strength.
   (6) Please do not take a LCD module to pieces and reconstruct it. Resolving and reconstructing modules may cause them not to work well.
   (7) Please do not touch metal frames with bare hands and soiled gloves. A color change of the metal frames can happen during a long preservation of soiled LCD modules.
   (8) Please pay attention to handling lead wire of backlight so that it is not tugged in connecting with inverter.
2. OPERATING PRECAUTIONS
   (1) Please be sure to turn off the power supply before connecting and disconnecting signal input cable.
   (2) Please do not change variable resistance settings in LCD module. They are adjusted to the most suitable value. If they are changed, it might happen LCD does not satisfy the characteristics specification
   (3) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
   (4) When fixed patterns are displayed for a long time, remnant image is likely to occur.
   (5) 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.
   (6) Please consider that LCD backlight takes longer time to become stable of radiation characteristics in low temperature than in room temperature.
3. ELECTROSTATIC DISCHARGE CONTROL
   (1) The operator should be grounded whenever he/she comes into contact with the module. Never touch any of the conductive parts such the copper leads on the PCB and the interface terminals with any parts of the human body.
   (3) The modules should be kept in antistatic bags or other containers resistant to static for storage.
   (4) Only properly grounded soldering irons should be used.
   (5) If an electric screwdriver is used, it should be well grounded and shielded from commutator sparks.
   (6) The normal static prevention measures should be observed for work clothes and working benches; for the latter conductive (rubber) mat is recommended
   (7) Since dry air is inductive to statics, a relative humidity of 50-60% is recommended.
4. STORAGE PRECAUTIONS
   (1) When you store LCDs for a long time, it is recommended to keep the temperature between 0°C-40°C without the exposure of sunlight and to keep the humidity less than 90%RH.
   (2) Please do not leave the LCDs in the environment of high humidity and high temperature such as 60°C 90%RH
   (3) Please do not leave the LCDs in the environment of low temperature; below -20°C.
5. OTHERS
   (1) A strong incident light into LCD panel might cause display characteristics' changing inferior because of polarizer film, color filter, and other materials becoming inferior. Please do not expose LCD module direct sunlight Land strong UV rays
   (2) Please pay attention to a panel side of LCD module not to contact with other materials in preserving it alone.
   (3) For the packaging box, please pay attention to the followings:
      a. Please do not pile them up more than 5 boxes. (They are not designed so.) And please do not turn over.
      b. Please handle packaging box with care not to give them sudden shock and vibrations. And also please do not throw them up.
      c. Packing box and inner case for LCDs are made of cardboard. So please pay attention not to get them wet. (Such like keeping them in high humidity or wet place can occur getting them wet.)
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.

13. OUTLINE DRAWING

PRELIMINARY



NOTE:
1. Tolerance is ±0.3 unless otherwise noted.
2. CN1 connector: Hirose DF14A-20P-1.25H or equivalent, matching side connector: Hirose DF14-20S-1.25C or equivalent.
3. Center brightness: 500 cd/m² (Typ)
4. * is important distances.
5. For RoHS.

CN1 PIN FUNCTION

1 Vcc	6 RxIN0+	11 RxIN2-	16 GND
2 Vcc	7 GND	12 RxIN2+	17 VDD
3 GND	8 RxIN1-	13 GND	18 VDD
4 GND	9 RxIN1+	14 CKIN-	19 GND
5 RxIN0-	10 GND	15 CKIN+	20 ADJ

AUTH	DESCRIPTION	DATE	APPROVED
	< ESR0210009 >		

REVISIONS

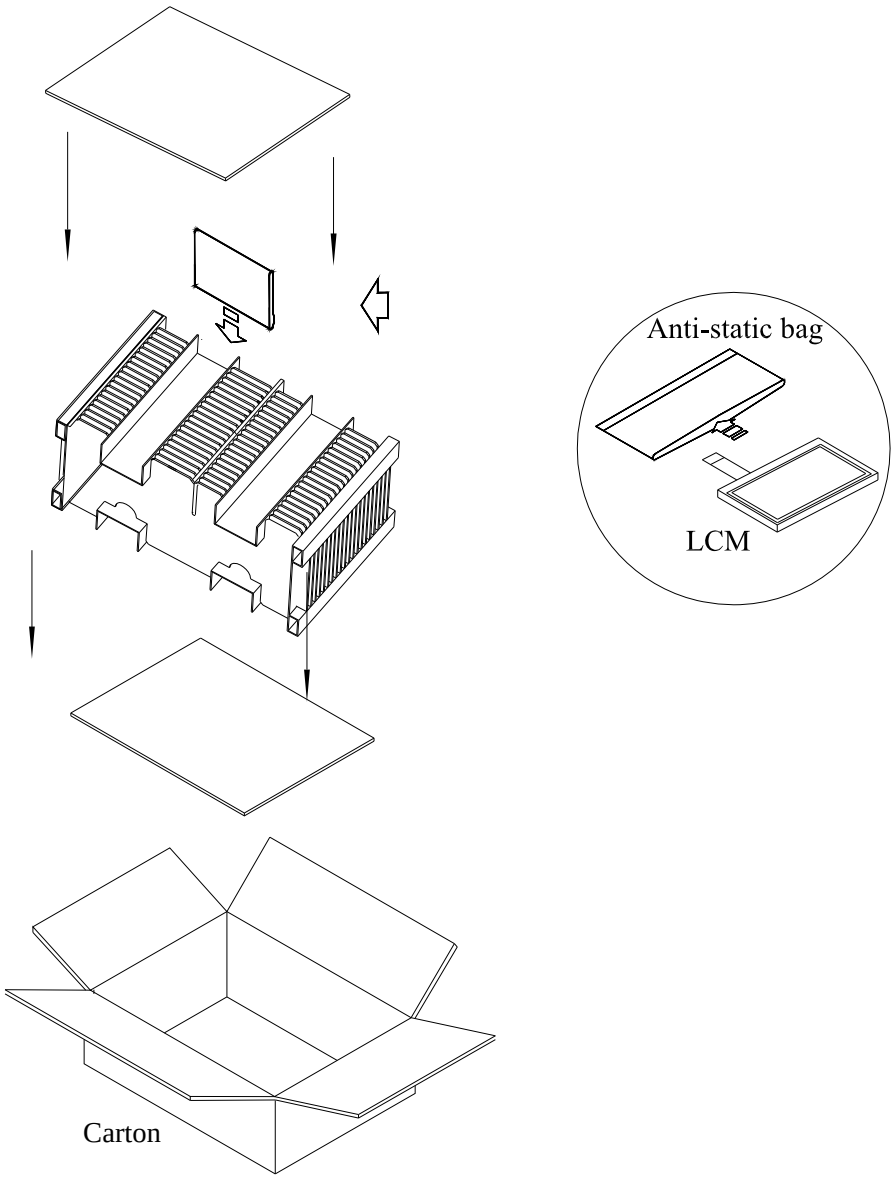
DATE: 2013/10/14
DRAWN:
CHECK:
APPROVE:

TITLE: 7" TFT Outline Dimension

DWG. NO. FG0700GEUG01
UNITS M M
REV. 1
SCALE 1 / 1
SHEET 1 OF 1

DATA IMAGE

14. PACKAGE INFORMATION



Item	Size(L*W*H)	Quantity	Note
Master Carton	482*282*279	1	
Quantity Per Master Carton		38	
N . W	5.0 (kg)	G . W	6.5 (kg)