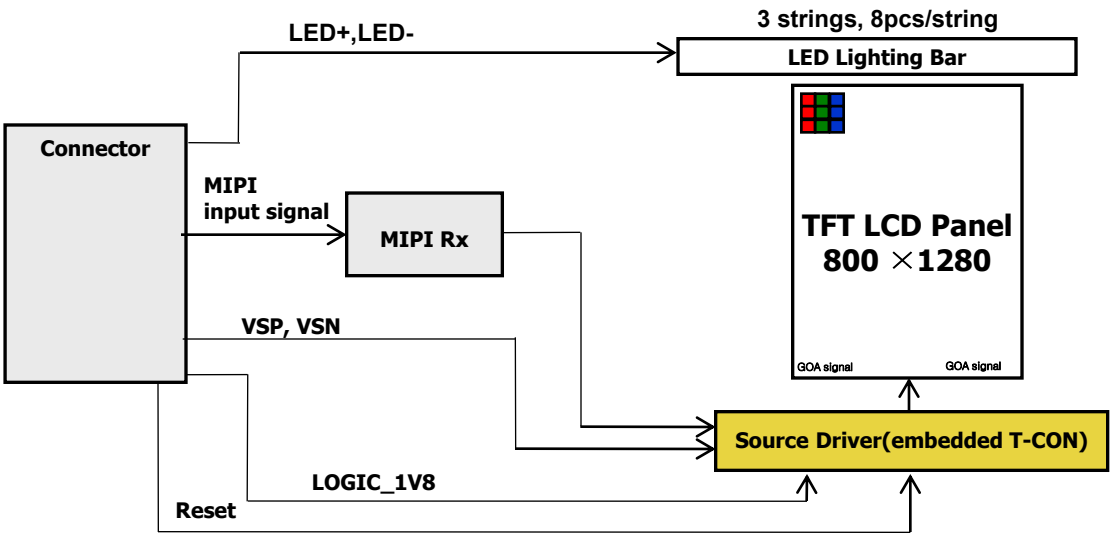
4. General Specification

A. Physical Specifications



Parameter	Specification	Unit	Remarks
Active area	8.00inch(203.1mm)	mm	107.64(H)×172.224(V)
Number of pixels	800(H) ×1280(V)	pixels	-
Pixel pitch	44.85(H) ×RGB×134.55(V)	um	-
Pixel arrangement	Pixels RGB stripe arrangement	-	-
Display colors	16.7M(Real 8bits)	colors	-
Display mode	Normally Black	-	HADS (PLS)
Pixel Domain	2 Domain	-	-
Outline Dimension	114.65(H) X 183.929(V) X 2.4(D) (typ.)	mm	Tolerance:±0.20mm
Weight	100.5 g (Typ.)	gram	Tolerance:±5.0g
Power Consumption	P_D : 0.22(max.)	Watt	White Pattern
	P_{BL} : 1.614(max.)		
	P_{total} : 1.834(max.)		
Surface Treatment	HC + LR	-	Upper Polarizer : HC + LR (Hardness : 2H) Lower Polarizer : AG 25
Back-light	Bottom edge side, 1-LED Lighting Bar Type	-	24* LED Array@3*8

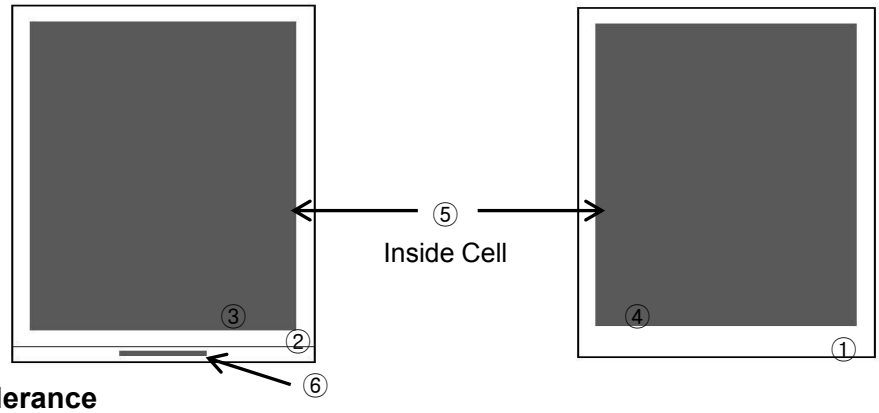
편광판종류	반사율Spec.[%]		
	Min	Typ.	Max
HC + LR	1.01	2.50	3.00

4. General Specification

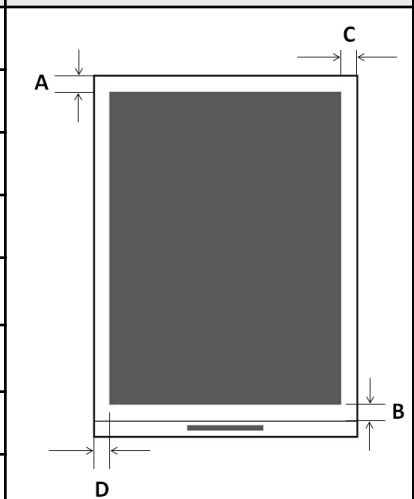
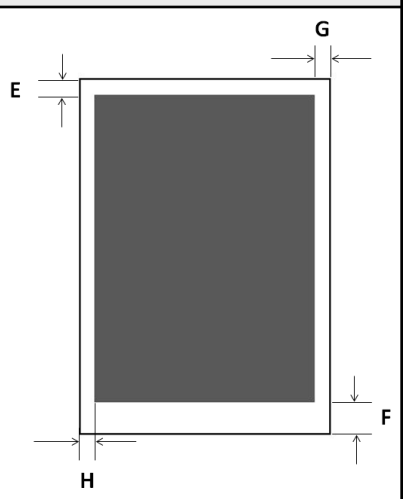
B. Part List

1) Panel Part List

NO.	Item	Maker	part name	Remark
1	TFT Glass	Dongxu	12-400069	①
2	Color Filter Glass	Dongxu	12-400069	②
3	UPPER Polarizer	LGC	POL-8WXGA VE-HC+LR_ADS_0.135	③
4	LOWER Polarizer	LGC	POL-8WXGA VE-AG25_ADS_0.129	④
5	Liquid Crystal	Merck	BOE-F013	⑤
6	Source Driver IC	Samsung	S6D7AA0X01-BOE5	⑥



POL Attach Tolerance

Item	Datum line	POL Attach tolerance	C/F Pol Drawing	TFT Pol Drawing
A	C/F Panel extremity	0.20±0.2mm		
B		0.804±0.2mm		
C		0.20±0.2mm		
D		0.20±0.2mm		
E	TFT Panel extremity	0.20±0.2mm		
F		3.704±0.2mm		
G		0.20±0.2mm		
H		0.20±0.2mm		

Glass / Panel 두께 관리 기준

Model	Glass / Panel Thickness Spec.	
	Glass	Panel
8inch WXGA	0.400mm± 0.035mm	1.064mm±0.070mm

-. Glass : TFT Glass and CF Glass
-. Panel : TFT + CF + 상Pol. + 하Pol.

4. General Specification

B. Part List

2) FPCBA Part List

No	Part	Items	Maker	Part No	Part name
1	-	FPCA	Leader-tech	44-9741465	FPCA
2	-	FPC	Leader-tech	47-6040388	FPC
3	D5	Diodes	LRC	47-7221070	LRB521S-30T1G
4	CN1	Connector	Hirose	47-7501172	FH34SRJ-34S-0.5SH
5	R1	Resistor	Fenghua/Yageo/Tai	47-746002	-
6	R3	Resistor	Fenghua/Yageo/Tai	47-7461131	-
8	R5	Resistor	Fenghua/Yageo/Tai	47-746010	-
9	R12,R13,R14	Resistor	Fenghua/Yageo/Tai	47-746044	-
10	C1,C21	CAPS	MURATA	47-730271	GRM155R61A105KE15D
11	C2,C3,C4,C18,C19	CAPS	MURATA	47-7301136	GRM155R61E105KA12D
12	C5,C7,C10,C11,C15, C16	CAPS	MURATA	47-730307	GRM155R60J225ME95D
13	C6,C14	CAPS	MURATA	47-7301117	GRM155R61A475MEAAD
14	C8,C9	CAPS	MURATA	-	GRM155R61A225ME95D
15	C17	CAPS	MURATA	47-7301118	GRM155R61E225KE11D

3) BLU Part list

No	Item	Maker	Part name
1	BACK COVER	Zeyu	SUS 304,0.15T
2	MOLD FRAME	Tongtai	PC 5010BL
3	LED	AOT	AEMWM-VTYY
4	LGP	Aiyige	PC HL8002,0.55T
5	REFLECTOR	3M	LBR160,0.16T
6	DOWN DIFFUSER	TSUIDEN	D169S,0.09T
7	PRISM	Soul brain	LF3-TA185-B21,0.185T
8	CURTAIN TAPE	TAPEX	5237BH,0.08T
9	DS FOR FPCA	Lijin	CT050DC,0.05T
10	LGP FIX TAPE	TESA	TESA 4972,0.06T
11	DOUBLE STICK TAPE	Jizhi	TESA4972, T0.05
12	BLK SINGLE TAPE	TAPEX	BOW 3525B,T0.15
13	MF TAPE	Jishui	3806BH,T0.06
14	FPC FIX TAPE	3M	3M 8010,T0.1

4. General Specification

B. Part List

4) Module Key Part List

No	Items	Maker	Part name
1	TFT Glass	Dongxu	0.4t glass
2	Color Filter Glass	Dongxu	0.4t glass
3	C/F side POL	LGC	POL-8WXGA VE-HC+LR_ADS_0.135
4	TFT side POL	LGC	POL-8WXGA VE-AG25_ADS_0.129
5	Liquid Crystal	Merck	BOE-F013
6	ACF (COG)	Sony	CP36931-18YA
7	ACF (FOG)	Hitachi	AC-7813KM
8	Tuffy	Hitachi	TF-4200EB-75
9	Source IC	Samsung	S6D7AA0X01-BOE5
10	B/L Assembly Supplier	BOE CT	44-8001896
11	LED Maker	AOT	AEMWM-VTYY
12	Reflector	3M	LBR160,0.16T
13	Upper Diffuser Sheet	-	-
14	Prism Sheet	Soul brain	LF3-TA185-B21,0.185T
15	Lower Diffusion Sheet	TSUIDEN	D169S,0.09T
16	Light Guide Plate	Mitsubishi	PC HL8002, 0.55T
17	FPCA	ShangDa	44-9741465
18	FUSE	AEM	F0603FF1500V032T
19	Inductor	TDK	VLS252008ET-2R2M VLS252008ET-100M
20	Diodes	LRC	LRB521S-30T1G
21	BJT	Diodes	MMBT3904LP
22	Res	Fenghua/Yageo/Tai	-
23	Connector	Hirose	FH34SRJ-34S-0.5SH
24	CAPS	MURATA	GRM155R61E105KA12D
25	CAPS	MURATA	GRM155R61A105KE15D
26	CAPS	MURATA	GRM155R61E225KE11D
27	CAPS	MURATA	GRM155R61A475MEAAD
28	CAPS	MURATA	GRM155R60J225ME95D

4. General Specification

C. Optical Specifications

1) Brightness= Max (=450nits)

주파수 : 51.2MHz　　측정온도 : 상온(23℃)　　LED Current: 21.7mA

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle range	Horizontal	Θ_3	CR > 10	80	85	90	Deg.	Note 1
		Θ_9		80	85	90	Deg.	
	Vertical	Θ_{12}		80	85	90	Deg.	
		Θ_6		80	85	90	Deg.	
Viewing Angle range	Horizontal	Θ_3	CR > 100	75	80	90	Deg.	
		Θ_9		75	80	90	Deg.	
	Vertical	Θ_{12}		75	80	90	Deg.	
		Θ_6		75	80	90	Deg.	
Color Gamut[CTF]			-	50	55	60	%	-
Gray Scale Linearity		$\Delta u„v„$	Θ = 0	0.00	0.01	0.02	-	-
Color shift		$\Delta u„v„$	Θ = 60	0.00	0.01	0.02	-	-
Cross talk			-	-	-	1	%	-
Luminance Contrast ratio[CTF]		CR	Θ = 0	700	900	1300	-	Note 2
Luminance of White[CTF]	Center Points	Y_w	Θ = 0	360	450	540	cd/m^2	Note 3
White Luminance uniformity	9 Points	ΔY5		80	85	100	%	Note 4
Red Luminance uniformity	9 Points	ΔY5		80	85	100	%	Note 4
Green Luminance uniformity	9 Points	ΔY5		80	85	100	%	Note 4
Blue Luminance uniformity	9 Points	ΔY5		80	85	100	%	Note 4
Gray Luminance uniformity	9 Points	ΔY5		70	80	100	%	Note 4

*** White 관리는 White Balance (색온도, Deviation)로 관리함, 색온도 Spec 신뢰성 CS2000에 준함**
*** 양산시 광특성은 최대휘도 (Typ. 450nits)기준 광특성만 측정관리함**
*** 광특성 표준 계측기 : 삼성전자 무선사업부 신뢰성 시험 그룹 CS-2000**

4. General Specification

C. Optical Specifications

1) Brightness= Max (=450nits)
주파수 : 51.2MHz 측정온도 : 상온(23℃) LED Current: 21.7mA

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
White balance[CTF]		Color Temp	Θ = 0	6450	6950	7650	K	Note 5
		Δuv		-0.0050 (-10MPCD)	0.0025 (5MPCD)	0.0100 (20MPCD)	-	
Reproduction of color	Red	R_x	Θ = 0	Typ. -0.02	0.614	Typ. +0.02	-	Note6
		R_y			0.356			
	Green	G_x		Typ. -0.03	0.332	Typ. +0.03		
		G_y			0.570			
	Blue	B_x		Typ. -0.02	0.152	Typ. +0.02		
		B_y			0.095			
Gray Scale Linearity (Color Shift)		$\Delta u'v'$	Θ = 0	0.00	0.01	0.02	-	-
Response Time (Rising + Falling)	상온	T_{RT}	W -> B	-	25	35	ms	Note 7 Ta= 25 C Θ = 0
			B -> W	-	25	35	ms	
			G -> G	-	-	60	ms	
	저온		W -> B	-	160	190	ms	
			B -> W	-	160	190	ms	
			G -> G	-	-	350	ms	
Gamma Scale		CT	Θ = 0	2.15	2.40	2.65	-	-
COG Pad Passivation thickness		PVXth	-	5400	6000	6600	Å	-

*** White 관리는 White Balance (색온도, Deviation)로 관리함, 색온도 Spec 신뢰성 CS2000에 준함**
*** 양산시 광특성은 최대휘도 (Typ. 450nits)기준 광특성만 측정관리함**
*** 광특성 표준 계측기 : 삼성전자 무선사업부 신뢰성 시험 그룹 CS-2000**

4. General Specification

C. Optical Specifications

7) Brightness= 10cd/m2

주파수 : 51.2MHz　　측정온도 : 상온(23℃)　　LED Current: 0.4 mA

10cd/㎡밝기
. 휘도, 명암비
. White Balance
.
색좌표,색재현율

result
OK

24
일반

Cpk는 1.33이상 일 것

LED Current = 0.4 mA (per chip)

【Model Specification】

		Min	Typ	Max
White	휘도	8.0	10.0	12.0
	x	0.2750	0.3050	0.3350
	y	0.2920	0.3220	0.3520
White Balance	CCT [K]	6450	6950	7650
	uv	-0.0500	0.0250	0.0100
Contrast Ratio		700	900	1300
Red	x	0.5840	0.6140	0.6440
	y	0.3260	0.3560	0.3860
Green	x	0.3020	0.3320	0.3620
	y	0.5400	0.5700	0.6000
Blue	x	0.1320	0.1520	0.1720
	y	0.0750	0.0950	0.1150
NTSC Ratio [%]		50%	55%	60%

n=20

Sample	White					Black	Cont/	Red		Green		Blue		NTSC
No	휘도	x	y	색온도	uv	L	Ratio	x	y	x	y	x	y	Ratio
5C4B	9.7	0.303	0.317	7236	0.002	0.01	906	0.615	0.355	0.334	0.568	0.155	0.101	53.6%
045Y	11.1	0.303	0.318	7218	0.002	0.01	1051	0.616	0.356	0.333	0.571	0.153	0.098	54.7%
067Y	10.3	0.307	0.319	6923	0.001	0.01	986	0.617	0.355	0.333	0.569	0.155	0.097	54.3%
132Y	10.4	0.302	0.316	7193	0.002	0.01	1003	0.617	0.355	0.333	0.570	0.154	0.097	54.6%
474Y	9.1	0.303	0.319	7136	0.003	0.01	901	0.617	0.356	0.334	0.570	0.155	0.099	54.3%
A0CK	10.7	0.300	0.313	7321	0.002	0.01	993	0.615	0.355	0.332	0.565	0.154	0.099	53.4%
A1FN	9.8	0.303	0.317	7108	0.002	0.01	962	0.617	0.356	0.333	0.571	0.153	0.095	54.9%
A2AF	10.2	0.301	0.314	7089	0.002	0.01	1010	0.616	0.354	0.333	0.568	0.155	0.098	54.1%
A3ED	10.2	0.302	0.316	7223	0.002	0.01	936	0.615	0.356	0.334	0.568	0.154	0.099	53.7%
A6AL	10.3	0.304	0.320	7054	0.003	0.01	945	0.617	0.356	0.334	0.572	0.155	0.100	54.6%
A7BL	9.8	0.300	0.312	7294	0.001	0.01	971	0.616	0.356	0.333	0.568	0.154	0.096	54.2%
A7DG	9.9	0.299	0.314	7310	0.003	0.01	976	0.616	0.356	0.331	0.566	0.153	0.098	54.0%
A7GD	10.2	0.302	0.315	7154	0.002	0.01	957	0.615	0.355	0.333	0.571	0.155	0.097	54.3%
B3EL	10.6	0.303	0.317	7168	0.002	0.01	1006	0.616	0.356	0.334	0.568	0.154	0.100	53.9%
B4AE	9.8	0.303	0.317	7199	0.002	0.01	969	0.616	0.356	0.334	0.569	0.155	0.100	53.8%
B4BN	10.1	0.303	0.319	7225	0.003	0.01	968	0.617	0.355	0.333	0.571	0.154	0.100	54.3%
B4GQ	9.8	0.299	0.315	7173	0.003	0.01	954	0.616	0.356	0.331	0.569	0.153	0.098	54.4%
B5FE	10.4	0.302	0.314	7142	0.001	0.01	942	0.616	0.355	0.334	0.570	0.154	0.094	54.6%
B7GL	10.3	0.305	0.322	7049	0.004	0.01	941	0.616	0.357	0.334	0.571	0.154	0.100	54.3%
B8AK	9.6	0.301	0.314	7085	0.001	0.01	953	0.615	0.354	0.333	0.567	0.155	0.098	53.9%
Ave	10.1	0.302	0.316	7165	0.002	0.01	966	0.616	0.355	0.333	0.569	0.154	0.098	54.2%
Max	11.1	0.307	0.322	7321	0.004	0.01	1051	0.617	0.357	0.334	0.572	0.155	0.101	54.9%
Min	9.1	0.299	0.312	6923	0.001	0.01	901	0.615	0.354	0.331	0.565	0.153	0.094	53.4%
σ	0.4	0.002	0.003	97	0.001	0.00	36	0.001	0.001	0.001	0.002	0.001	0.002	0.4%
Cpk	1.39	-	-	1.64	2.48		2.46	11.76	13.94	11.99	5.28	15.43	4.94	3.55

4. General Specification

C. Optical Specifications

8) 야외모드에서의 광학데이터

주파수 : 51.2MHz 측정온도 : 상온(23℃) LED Current: 27.2mA

Sample	White					Black	Cont/	Red		Green		Blue		NTSC
No	휘도	x	y	색온도	uv	L	Ratio	x	y	x	y	x	y	Ratio
5C4B	480.3	0.305	0.323	7035	0.004	0.44	1091.6	0.614	0.355	0.332	0.573	0.156	0.103	53.9%
045Y	518	0.305	0.323	6993	0.004	0.45	1151.1	0.615	0.355	0.332	0.576	0.155	0.100	55.0%
067Y	534.3	0.311	0.326	6632	0.003	0.46	1161.5	0.615	0.355	0.333	0.574	0.156	0.100	54.4%
132Y	488.5	0.302	0.318	7242	0.003	0.45	1085.6	0.615	0.355	0.331	0.574	0.155	0.098	54.9%
474Y	475.6	0.306	0.324	6939	0.004	0.46	1033.9	0.615	0.357	0.333	0.575	0.156	0.101	54.4%
A0CK	530.4	0.305	0.322	7011	0.003	0.45	1178.7	0.613	0.355	0.333	0.572	0.156	0.102	53.7%
A1FN	491.6	0.306	0.323	6930	0.003	0.46	1068.7	0.615	0.356	0.333	0.576	0.155	0.098	55.1%
A2AF	538.5	0.305	0.321	7034	0.003	0.47	1145.7	0.614	0.355	0.333	0.574	0.156	0.100	54.2%
A3ED	519.8	0.306	0.322	6968	0.003	0.47	1106.0	0.614	0.356	0.333	0.573	0.156	0.102	53.9%
A6AL	545.4	0.308	0.326	6825	0.004	0.48	1136.3	0.616	0.356	0.333	0.577	0.156	0.102	54.8%
Min	475.6	0.302	0.318	6632	0.003	0.44	1068.7	0.613	0.355	0.331	0.572	0.155	0.098	53.70%
Ave	512.2	0.3059	0.3228	6960.9	0.0034	0.459	1115.9	0.6146	0.3555	0.3326	0.5744	0.1557	0.1006	54.43%
Max	545.4	0.311	0.326	7242	0.004	0.48	1178.7	0.616	0.357	0.333	0.577	0.156	0.103	55.10%

4. General Specification

C. Optical Specifications (Remark)

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 FIGURE 1).

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 FIGURE 1) Luminance Contrast Ratio (CR) is defined mathematically.

3. Center Luminance of white is defined as luminance values of 1point average 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. The luminance is measured by CA310 when the LED current is set at 17mA.

.

4. The White luminance uniformity on LCD surface is then expressed as : ΔY = Minimum Luminance of 9points / Maximum Luminance of 9points (see FIGURE 2).

5. The color chromaticity coordinates specified in Table 5 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.

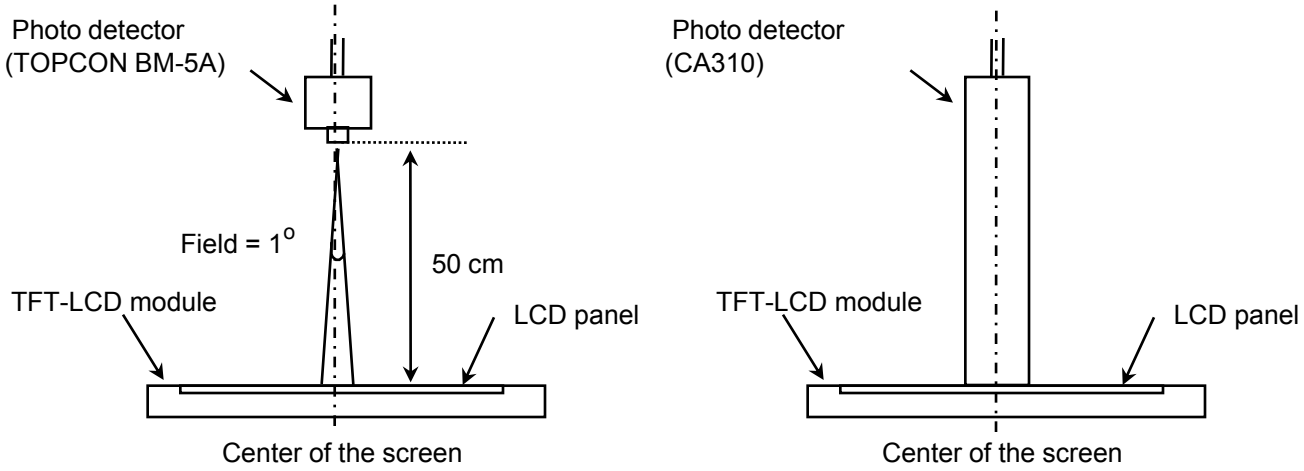
6.The color chromaticity coordinates specified in Table 4. shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Measurements shall be made at the center of the panel.

7. The electro-optical response time measurements shall be made as FIGURE 3 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.

4. General Specification

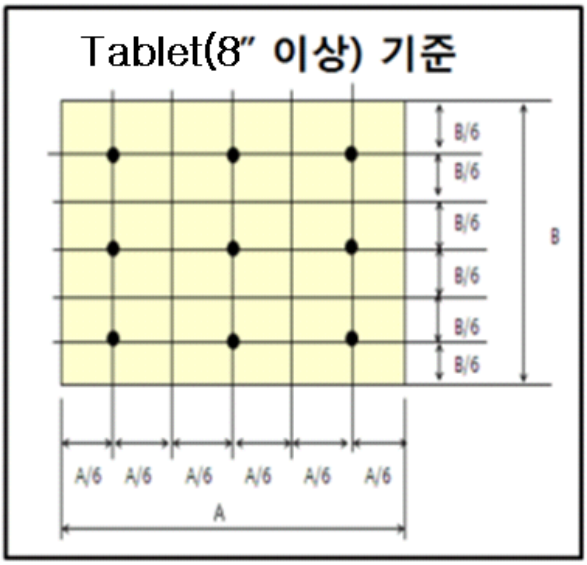
C. Optical Specifications (Remark)

Figure 1. Measurement Set Up



View angel range measurement setup Luminance , uniformity and color measurement setup

Figure 2. White Luminance and Uniformity Measurement Locations (9 points)

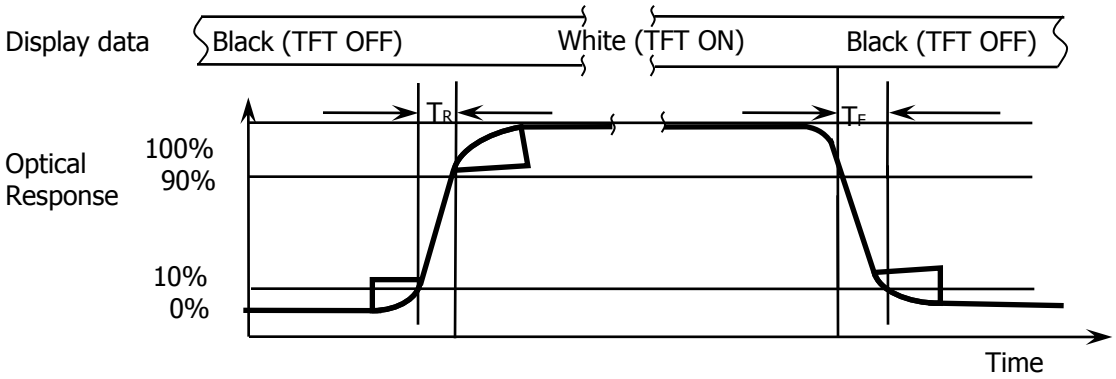


Center Luminance of white is defined as luminance values of center 5 point across the LCD surface. Luminance shall be measured with all pixels in the view fiel d set first to white. This measurement shall be taken at the locations shown in FIGU RE 2 for a total of the measurements per display.
The White luminance uniformity on LCD surface is then expressed as : ΔY9 = Mini mum Luminance of 9points / Maximum Luminance of 9points (see FIGURE 2).

4. General Specification

C. Optical Specifications (Remark)

Figure 3. Response Time Testing



The electro-optical response time measurements shall be made as shown in FIG URE 3 by switching the “data” input signal ON and OFF. The times needed for th e luminance to change from 10% to 90% is Tr and 90% to 10% is Td.

5. Electrical Specification

B. Electrical characteristics

[Ta =25±2 ℃]

Parameter			Symbol	Values			Unit	Note
				Min	Typ	Max		
Power Supply1 Input Voltage			PAVDD	5.1	5.4	5.7	Vdc	1
Power Supply1 Current			I_PAVDD	14	17	20	mA	
Power Supply2 Input Voltage			NAVDD	-5.7	-5.4	-5.1	Vdc	
Power Supply2 Current			I_NAVDD	8	11	14	mA	
Power Supply3 Input Voltage			VDD1V8	1.7	1.8	1.9	Vdc	
Power Supply3 Current			I_VDD1V8	6	9	13	mA	
Power Consumption	LOGIC	@PAVDD	P_PAVDD	70	92	114	mWatt	
		@NAVDD	P_NAVDD	40	60	81	mWatt	
		@LOGIC1V8	P_LOGIC1V8	10	16	25	mWatt	
		TOTAL	P_TOTAL	120	168	220	mWatt	
	BLU TOTAL		P_BLU TOTAL	1406	1510	1614	mWatt	
	TOTAL[CTF]		P_TOTAL	1526	1678	1834	mWatt	
Rush current			IRUSH	-	0.7	1	A	2

Notes : 1. The supply voltage is measured and specified at the interface connector of LCM.
The current draw and power consumption specified is for VDD1V8=1.8V,PAVDD=5.4V,NAVDD=-5.4V, frame rate f_V=60Hz and clock frequency = 68.4MHz. Test pattern of power supply current is : Min. ,Typ. And Max. @White Pattern

2. The duration of rush current is about 2ms and rising time of Power input is 1ms (min)

5. Electrical Specification

B. Electrical characteristics

[Ta =25±2 ℃]

Items	Symbol	Min	Typ	Max	Unit	Remark
Forward Current	IF	-	65.1	-	mA	24LEDs (8LED Serial, 3LED Parallel)
Forward Voltage	VF	21.6	23.2	24.8	V	
Backlight Power Consumption	-	1406	1510	1614	mW	
Operating Life Time	-	20000		-	Hrs	IF = 21.7mA Note 3

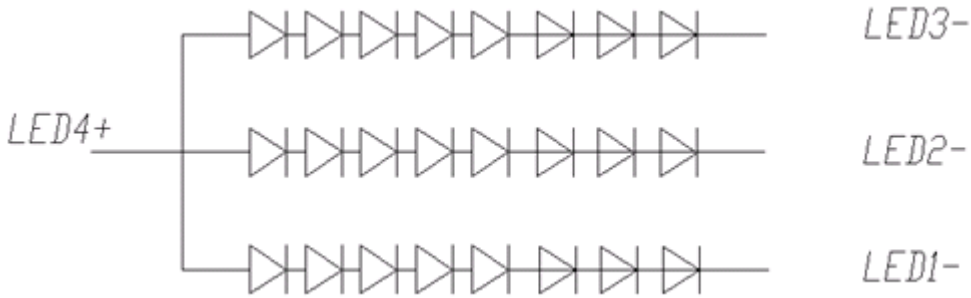
[Ta =60±2 ℃]

Items	Symbol	Min	Typ	Max	Unit	Remark
Operating Lift Time	-	15000		-	Hrs	IF = 21.7mA

Note1: The LED driving condition is defined for each LED module (8 LED Serial, 3 LED Parallel). For each LED: IF (1/3) =21.7mA, VF (1/5) =2.9 V

Note2: Under LCM operating, the stable forward current should be inputted. And forward voltage is for reference only.

Note3: IF is defined for one channel LED. Optical performance should be evaluated at Ta=25℃ only If LED is driven by high current, high ambient temperature & humidity condition. The life time of LED will be reduced. Operating life means brightness goes down to 50% initial brightness. Typical operating life time is estimated data.



Surface Resistance and ESD

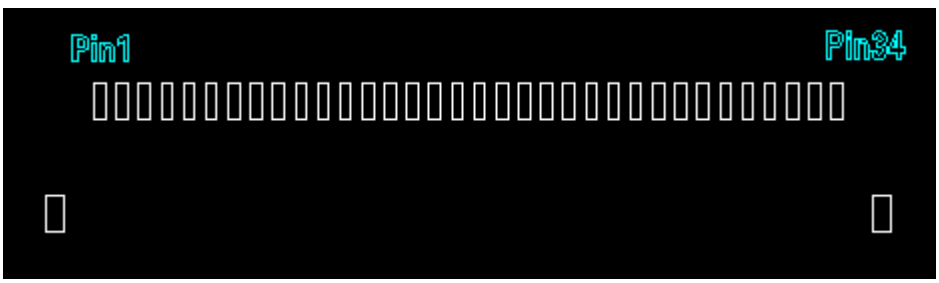
Checking condition : room temperature and 40~70%RH

	Surface Resistance (Ohm/sq)	ESD
Reel	10E4~10E6	<50V
Cover Tape	10E9~10E11	<50V
Carrier Tape	10E4~10E6	<50V
Aluminum Bag	10E9~10E11	<50V

5. Electrical Specification

C. Connector Pin assignment

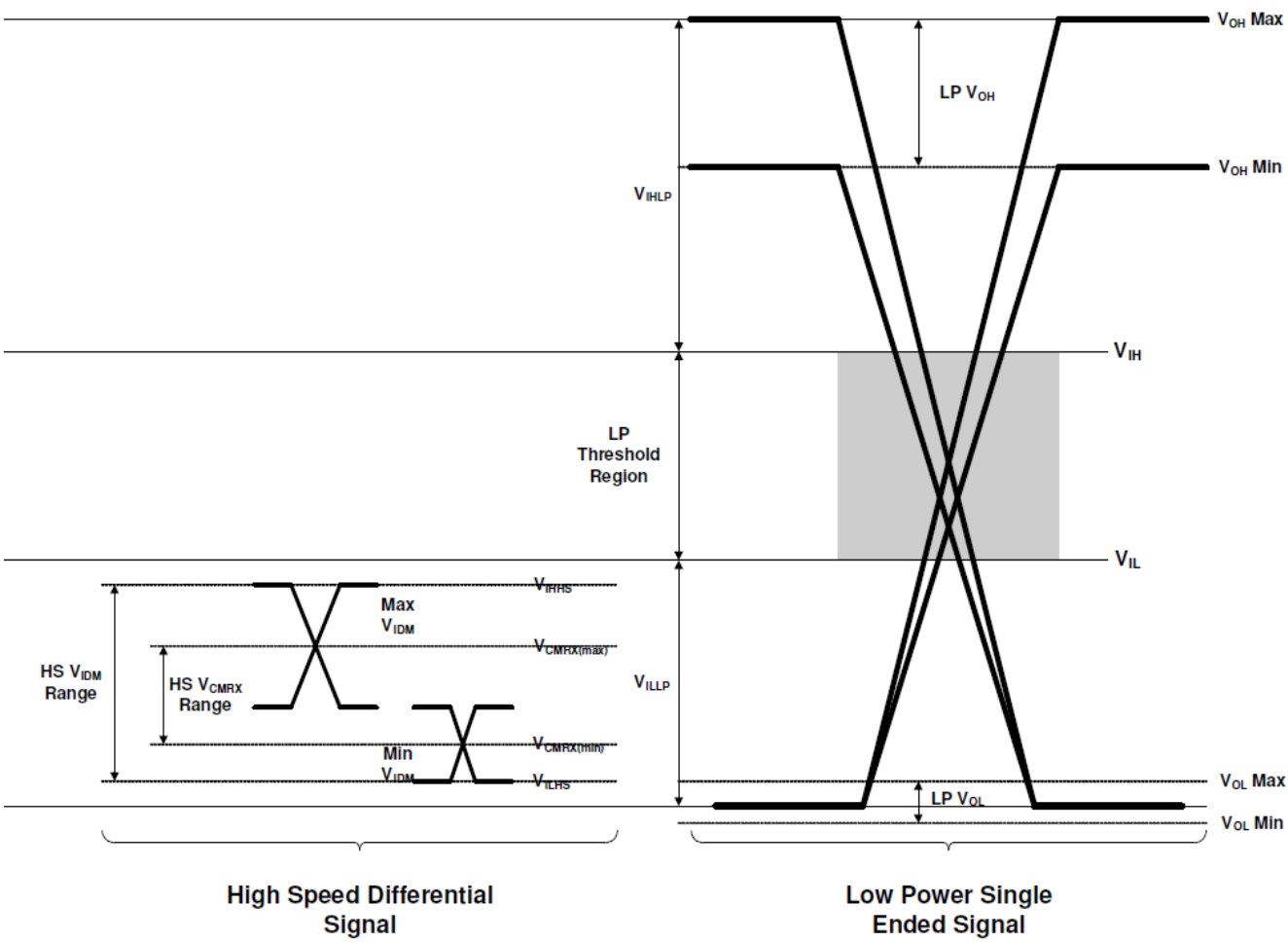
Pin. No.	Pin-Name	I/O	Description	SPEC
1	PAVDD	P	LCD analog power supply	5.4±0.3V 50mA
2	PAVDD	P	LCD analog power supply	5.4±0.3V 50mA
3	NC	-	No connection	-
4	NAVDD	P	LCD analog power supply	-5.4±0.3V 50mA
5	NAVDD	P	LCD analog power supply	-5.4±0.3V 50mA
6	NC	-	No connection	-
7	VDD1V8	P	Digital circuit IO power supply.	1.8±0.1V 30mA
8	PWM	O	CABC PWM control signal for brightness of the LED backlight.	1.8V Logic
9	BC-C	O	Turn on/off signal of BL	1.8V Logic
10	RESET	I	Global reset	1.8V Logic
11	GND	P	Ground	-
12	D2P	I/O	MIPI data 2 Positive signal	-
13	D2N	I/O	MIPI data 2 negative signal	-
14	GND	P	Ground	-
15	D1P	I/O	MIPI data 1 Positive signal	-
16	D1N	I/O	MIPI data 1 negative signal	-
17	GND	P	Ground	-
18	CLKP	I/O	MIPI CLK Positive signal	-
19	CLKN	I/O	MIPI CLK negative signa	-
20	GND	P	Ground	-
21	D0P	I/O	MIPI data 0 Positive signal	-
22	D0N	I/O	MIPI data 0 negative signal	-
23	GND	P	Ground	-
24	D3P	I/O	MIPI data 3 Positive signal	-
25	D3N	I/O	MIPI data 3 negative signal	-
26	GND	P	Ground	-
27	NC	-	OTP flasing pin, only used for BOE	-
28	FB1	P	LED cathode	21.7mA
29	FB2	P	LED cathode	21.7mA
30	FB3	P	LED cathode	21.7mA
31	NC	-	No connection	-
32	VLED	P	LED anode	65.1mA
33	VLED	P	LED anode	
34	NC	-	No connection	-



5. Electrical Specification

D. Timing Parameters

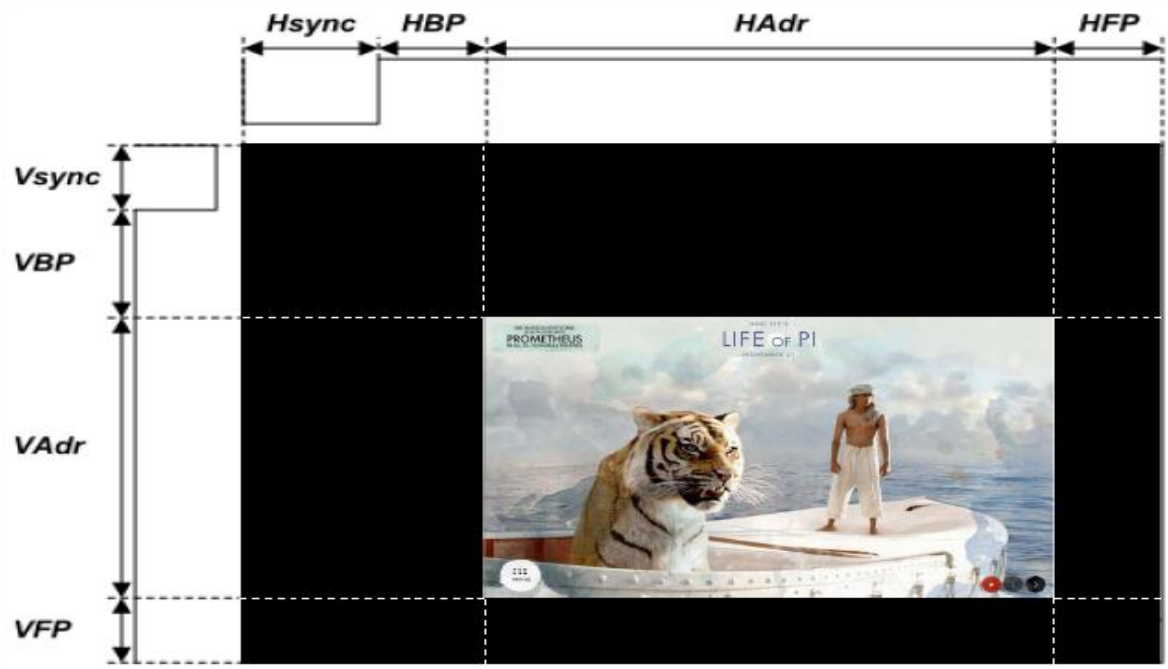
Parameter	Symbol	Min	Typ	Max	Unit	Condition
MIPI digital operation current	I_{VCCIF}	8	11	15	mA	-
MIPI digital stand-by current	$I_{VCCIFST}$	-	200	-	uA	-
MIPI Characteristics for High Speed Receiver						
Single-ended input low voltage	V_{ILHS}	-40	-	-	mV	
Single-ended input high voltage	V_{IHHS}	-	-	460	mV	
Common-mode voltage	V_{CMRXDC}	70	-	330	mV	
Differential input impedance	Z_{ID}	90	100	110	Ω	
Differential input high threshold	VIHHS	-	-	70	mV	
Differential input high threshold	VIHHS	-70	-	-	mV	
MIPI Characteristics for Low Power Receiver						
Pad signal voltage range	V_I	-50	-	1350	mV	
Output low level	V_{OL}	-50	-	50	mV	
Output high level	V_{OH}	1.1	1.2	1.3	V	



5. Electrical Specification

E. MIPI Timing Parameter

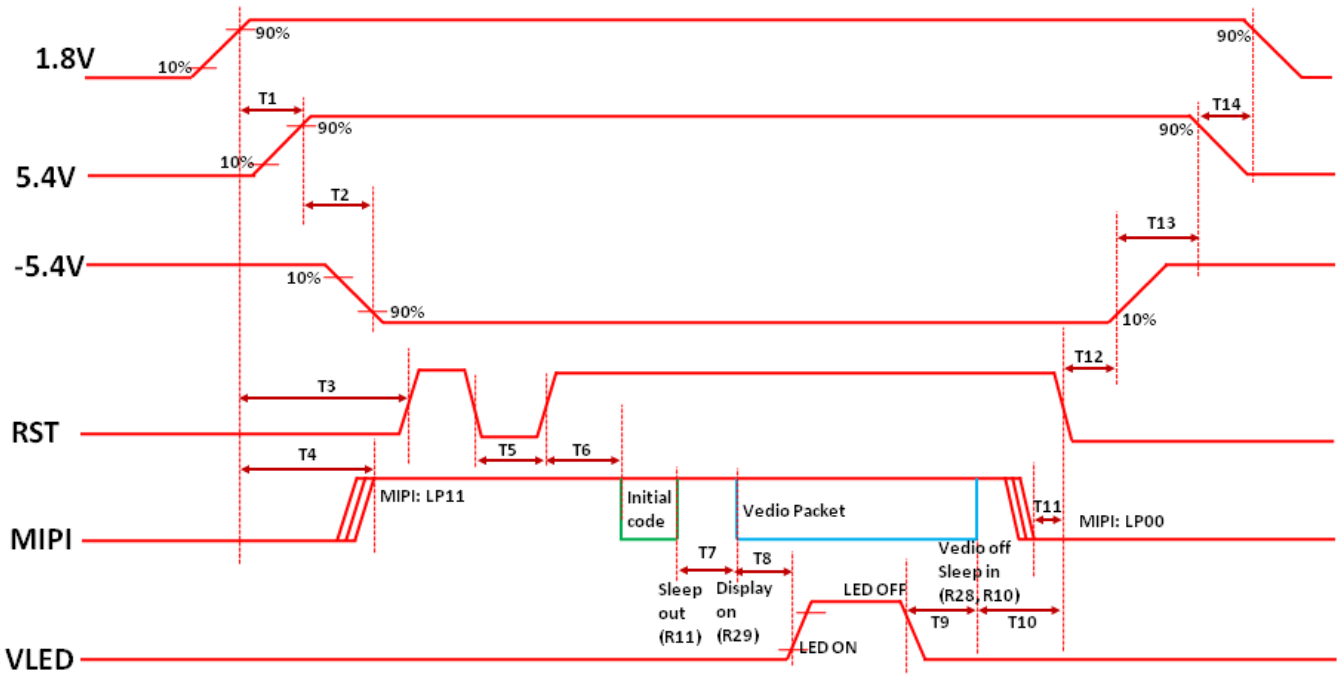
Item	Symbol	Min	Typ	Max	Unit	Remarks
Pixel CLK	Tpixclk		68.43		MHz	-
MIPI CLK	Period	2	2.08	2.17	ns	-
	Frequency	460	480	500	Mbps	-
Hsync	Period	16			Tpixclk	-
	Frequency		77.76		KHz	-
Vsync	Period	2			Line	-
	Frequency		60	-	Hz	-
Horizontal Active Display Term rgb vporch 8 6 2 rgb hporch 16 48 16	HAdr		800	-	Tpixclk	-
	HBP	48	160		Tpixclk	-
	HFP	16	44		Tpixclk	-
	Total		1004		Tpixclk	-
Vertical Active Display Term	Vadr		1280	-	Line	-
	VBP	6	28		Line	-
	VFP	8	20		Line	-
	Total		1328		Line	-



5. Electrical Specification

F. 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.



Check Item		SPEC
Power on	t1	0.01~5ms
	t2	1~10ms
	t3	20~100ms
	t4	0~T3 ms
	t5	0.01~1ms
	t6	50~100ms
	t7	120~200ms
	t8	35ms
Power off	t9	35ms
	t10	50~100ms
	t11	0ms
	t12	0ms
	t13	0ms
	t14	0ms

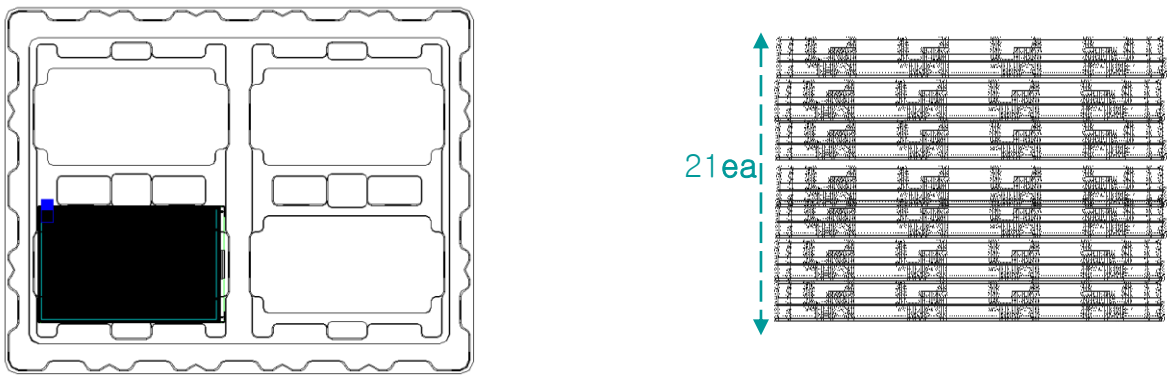
Notes:

1. When the power supply VDD1V8 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.
   Back Light must be turn on after power for logic and interface signal are valid.

6. Packing Form

A. Packing Description

Packing Condition	Contents
Packing type	PET + Antistatic Backing packing type
PET material model	PET (10^6~10^9Ω/sq)
PET packing type	PET Tray
Number of panels per PET	4 pieces
Number of PET per inner box	21units (20units + 1 unit empty)
Number of inner box per pallet	16 ea
Number of panels per inner box	80 pieces
Number of panels per pallet	1280pieces



picture 1

6. Packing Form

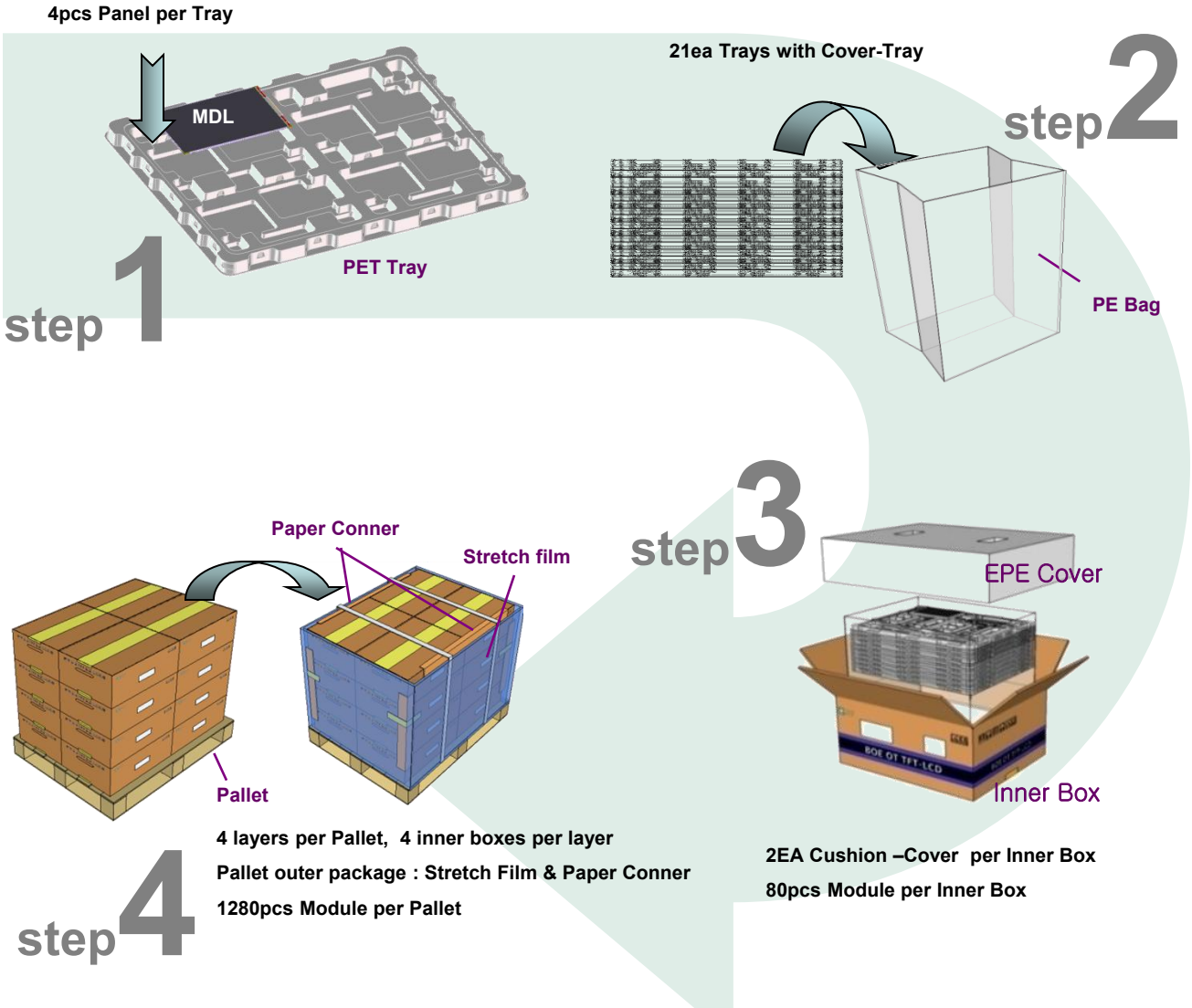
B. Description of PET material composed

Components	Item contained
Base resin	Polyethylene terephthalate
Additive	Antistatic backing

Remarks : Antistatic backing is overlaid on Polyethylene terephthalate.

6. Packing Form

C. Description of packing procedure



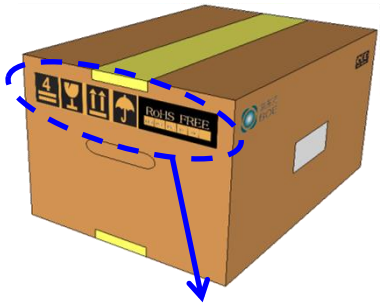
No.	Description	Quantity
1	TFT-LCD	1280pcs/Pallet
2	Module/PET Tray	4pcs
3	PET Tray	21 ea (1ea : empty) / Inner Box
4	Inner Box	16ea/Pallet
5	PE Bag	16ea/Pallet
6	Paper Conner	6ea/Pallet
7	Belt tape	1,440-1,488 cm
8	**Stretch Film**	28 ~ 30M
9	Distribution label	1pcs

※ Standard packing dimensions is 510×410×252mm, it would be observed strictly.

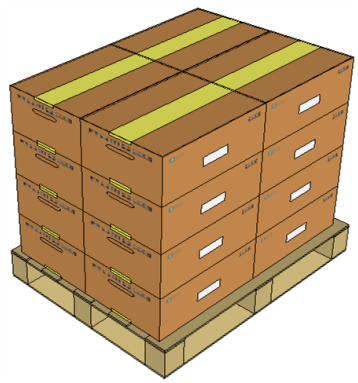
6. Packing Form

C. Description of packing procedure (picture)

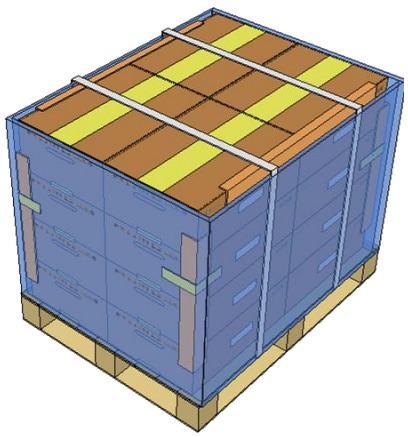
Inner Box



Inner Box On Pallet

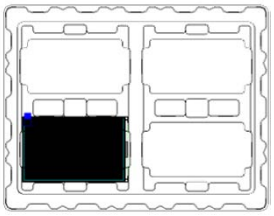


Protective film & Paper Corner



6. Packing Form

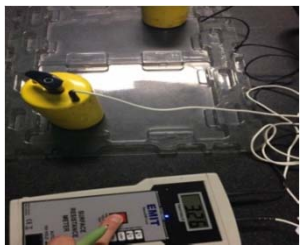
D. ESD measurement



Features
: Good Electrical Conductivity
: Good Dimensional Stability
: Good Stiffness / Toughness Balance
: Low plough-out

Properties	Test Methods	Units	Kenneled
Base Polymer	-	-	PET
Thickness	Thickness gauge	mm	1.0±0.3
Surface Resistivity	ASTM D257	Ω / sq	$1\times10^{6\sim9}$
ESD	ESD Tester	V	＜100

Test Methods



1. Put Tray On Marble platform
2. Put Electrostatic Tester On Tray (Inside & Outside)
3. Test Frequency : 4 times on Inside , 4 times On Outside
   (Test Result is Max Value)
4. Test Tray Q'ty : 3~5 ea

-. Tray 박리 대전압 측정

ITEM	Spec	Test1	Test2	Test3	Test4	Test5	Test Result
Value(Ω / sq)	$1\times10^{6\sim9}$	3.76×10^{8}	3.23×10^{7}	1.06×10^{8}	6.07×10^{8}	6.48×10^{7}	OK
Voltage(V)	＜100	90	50	70	70	80	OK

-. 상 pol. 보호비닐 이형지 제거 시 박리 대전압 측정

ITEM	Spec	Test1	Test2	Test3	Test4	Test5	Test Result
Value(Ω / sq)	$1\times10^{6\sim9}$	2.34×10^{8}	7.09×10^{7}	2.45×10^{8}	5.21×10^{8}	3.39×10^{8}	OK
Voltage(V)	＜100	70	50	70	60	90	OK

7. Mechanical Specifications

A. Mechanical Characteristics

FIGURE 5 shows mechanical outlines for the model TV080WXM-NS0.
Other parameters are shown in Table below.

<Dimensional Parameters>

Parameter	Specification	Unit
Active Area	107.64(H)×172.224(V)	-
Number of pixels	800(H) X1280 (V) (1 pixel = R + G + B dots)	-
Pixel pitch	44.85(H) ×RGB×134.55(V)	-
Pixel arrangement	RGB Vertical stripe	-
Display colors	16.7M	-
Display mode	Normally Black	-
Dimensional outline	114.65(H) X 183.929(V) X 2.4(D) (typ.)	mm
Weight	100.5± 5g	gram
Back-light	LED	-
Panel Thickness	0.8(typ.)	mm

Polarizer Hardness.

The surface of the LCD has a hard coating to reduce scratching.

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.

7. Mechanical Specifications

B. HANDLING & CAUTIONS

(1) Cautions when taking out the module

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

(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 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.

(3) Cautions for the operation

When the module is operating, do not lose CLK, ENAB signals. If any one of these signals is lost, the LCD panel would be damaged.

Obey the supply voltage sequence. If wrong sequence is applied, the module would be damaged.

(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.

(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.

(6) Other cautions

Do not disassemble and/or re-assemble LCD module.

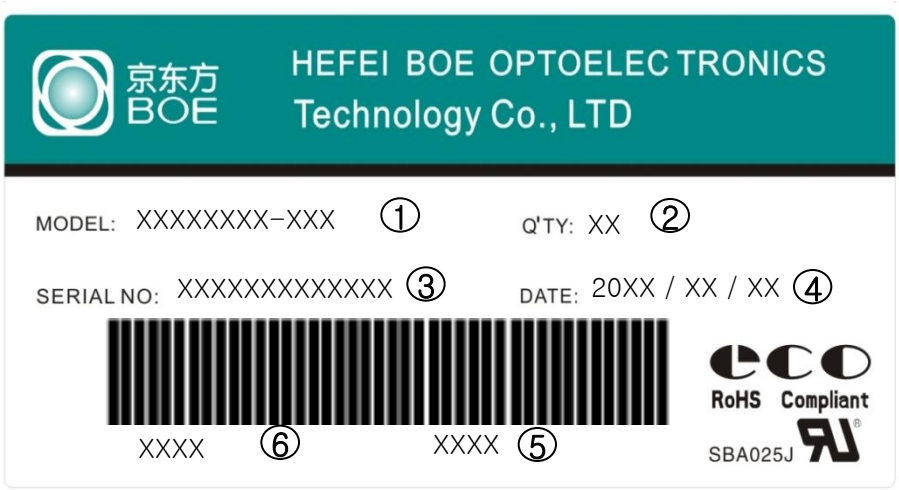
Do not re-adjust variable resistor or switch etc.

When returning the module for repair or etc., Please pack the module not to be broken. We recommend to use the original shipping packages.

7. Mechanical Specifications

C. LABEL

Box label



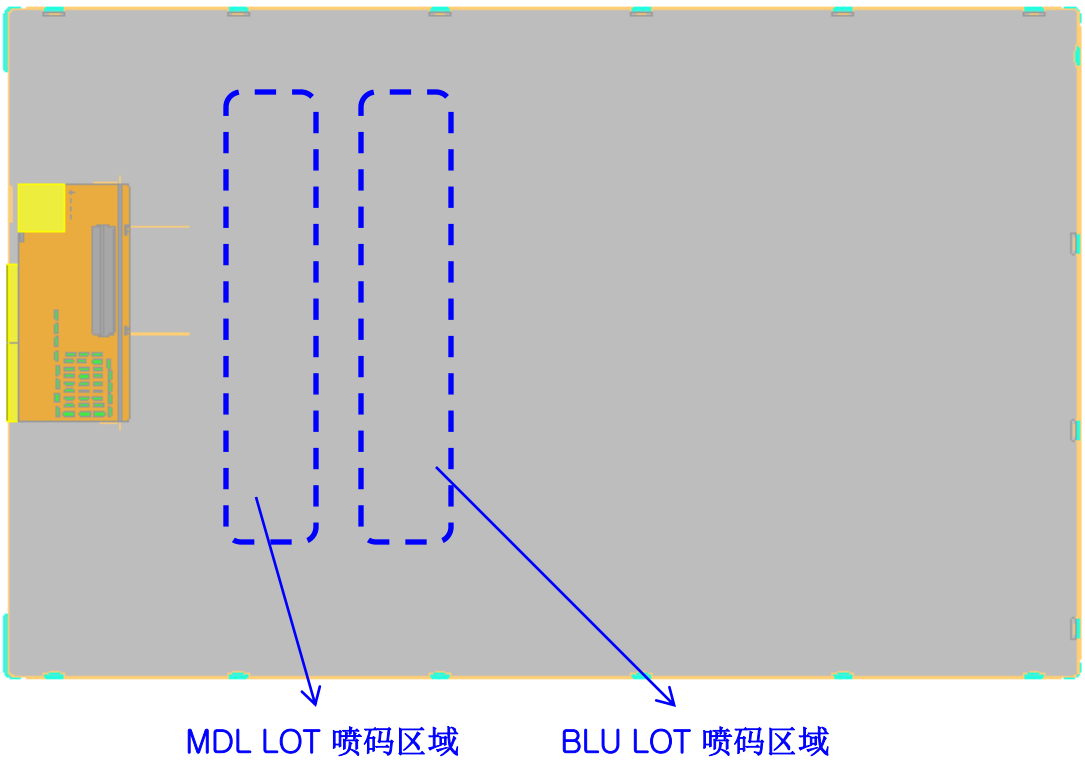
Label Size:
110 mm (L) 56 mm (W)
Contents
1. FG-CODE
2. Box 제품 수량
3. Box ID, Code Rule
4. Box Packing Date
5. FG-CODE뒤4자리
6.고객단 제품 코드

번호	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	**4**	**J**	**P**	**3**	**1**	**2**	**7**	**0**	**0**	**0**	**1**	**H**	**D**
Description	**GBN Code**		**Grade**	**B3**	년도		**월**	**Rev**	서열번호				

7. Mechanical Specifications

D. LOT Marking

LCD 배면 SUS Back Cover 에 LOT ID Printing 방식으로 인쇄



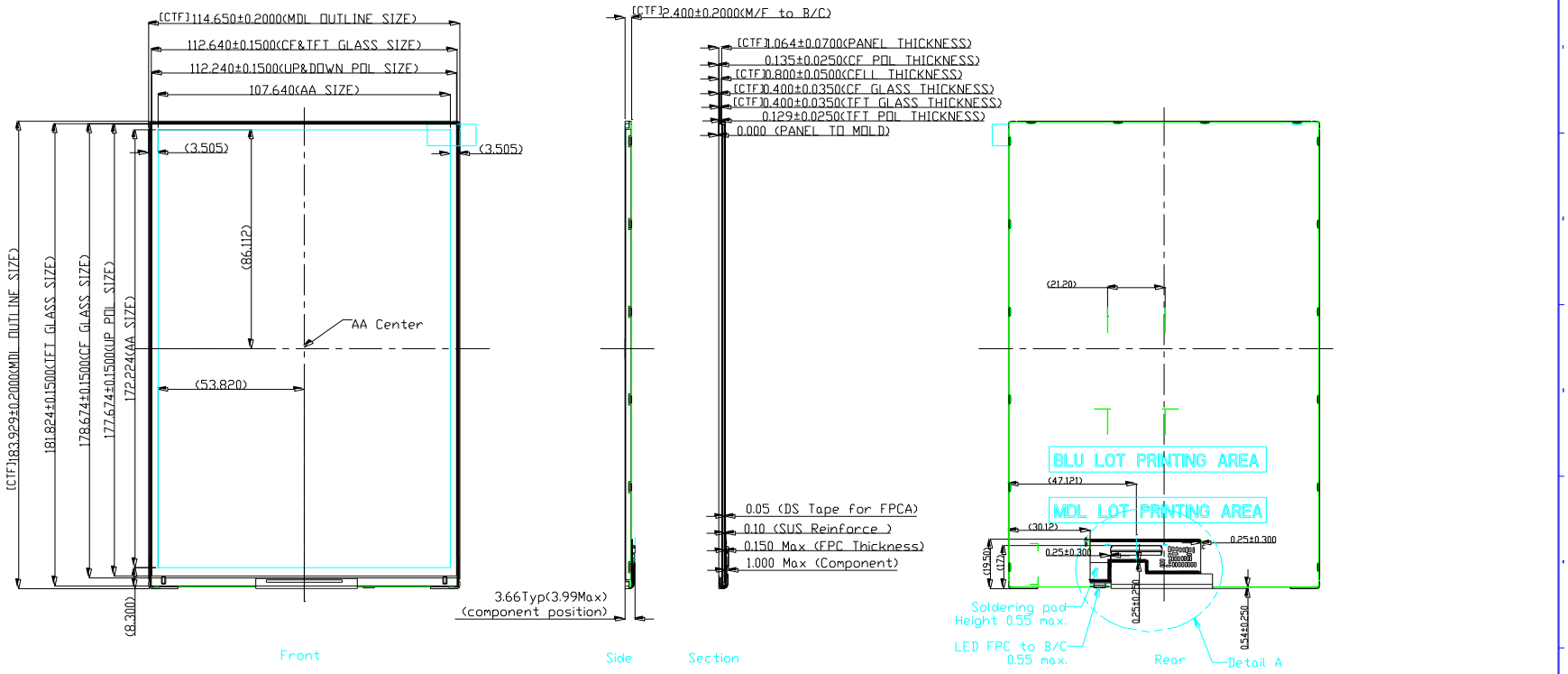
1. MDL ID Bar code
2. FG-CODE
3. MDL ID

번호	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Code	X	X	S	3	5	2	7	3	2	P	0	Z	0	1	E	E	J
Description	GBN code		Grade	B3	년도	월		FG Code뒤4자리				서열번호(Z00000~ZZZZZZ)					

7. Mechanical Specifications

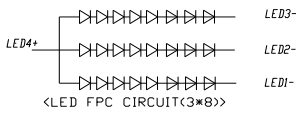
E. Mechanical Outline Dimension

ZONE	LTR	REVISION	DESCRIPTION	DATE	APP'L
		P0	INITIAL RELEASE	2015.08.21	



Note

1.IMPORTANT CPK DIMENTIONS: [CTF]
2.Halogen Free & RoHS & REACH .
3.LED BAR SCHEMATIC MAP, ILED=23mA, VLED=3.0V max.
4.Backcover SUS Close Type, BURR ≤ 0.03mm.
5.CF&TFT Glass Thickness: 0.400mm±0.035mm.
6.Panel Thickness(TFT+CF+TFT Pol+CF Pol): 1.064mm±0.0700mm.
7.Panel & Mold Frame Height Gap: 0mm.
8. "ㄷ" bending structure.
9. Conductive double sticky tape Part No. "CT050DC",one of eight kinds Standard Tape.
10. FPC & IC Cover tape attach torlerance is between attach mark on Backcover and FPC or IC cover tape.
11. No Bubble in the pillow tape.
12. Do not contain any substances which are specified in (□QA-2049).
13. A.B.C for fpcb align mark.
14. FPCB fix tape CT050DC haven't been used in other SEC product , but it recommended by SEC.



<LED FPC CIRCUIT(3*8)>

TOLERANCE TABLE(±)				
DIMENSION	1 GRADE	2 GRADE	3 GRADE	4 GRADE
L ≤ 20	0.05	0.1	0.1	0.2
20 < L ≤ 50	0.1	0.15	0.2	0.25
50 < L ≤ 100	0.15	0.2	0.25	0.3
100 < L ≤ 200	0.2	0.25	0.3	0.5
200 < L	0.25	0.3	0.5	0.8
UNLESS OTHERWISE SPECIFIED				

REF. DESC.	SUB PART NO.	DESCRIPTION	MATERIAL	COLOR/FINISH	Q'TY	REMARKS

DRAWN BY	CHECKED BY	APPROVED BY
CHUHANQI	/	J.M.PARK
2015.08.21		2015.08.21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN ㎜(INCHES) TOLERANCES ARE; LINEAR ± SEE TABLE ANGLES ± 1° RADII UNLESS NOTED; ± 0.10

ANGLE 3rd | SCALE 1/1

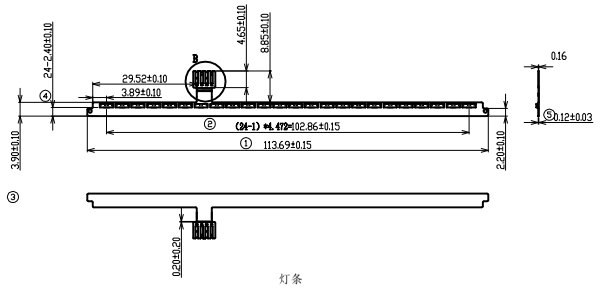
TITLE MDL_OUTLINE | REV P0

PART NO. 44-******* | SHEET 1/1

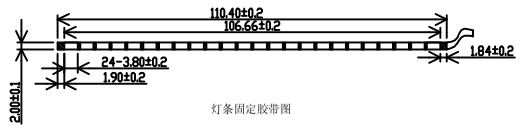
DWG NO. 44-***-**** | SIZE A2

BOE | FACTORY B3 | MDL 8"_WXGA_PORTRAIT | REF Mechniacal Design Dept.

ZONE	LTR	ECN NO.	REVISION	DATE	REVISOR	Approved
				2015-06-16	P0	



灯条

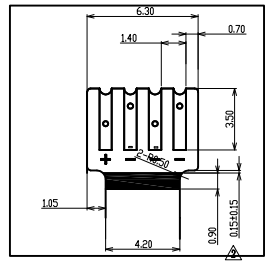


灯条固定胶带图

胶带+灯条组件图

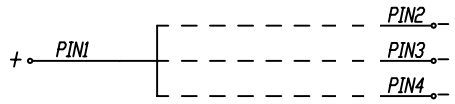
*DETAIL "B" (S/C = 5:1)

*DETAIL "B" (S/C = 5:1)

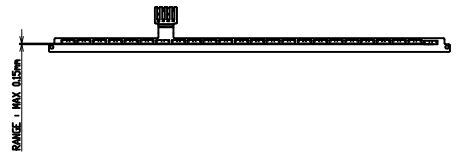


DETAIL "B" (S=5:1)

*PIN MAP



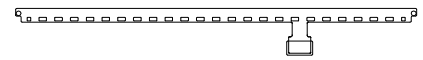
*LOCATION RANGE



TOP PATTERN

BOTTOM PATTERN

TOP COVERLAY

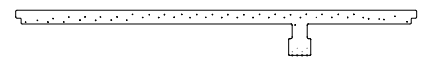


BOTTOM COVERLAY

TOP SILK

BOTTOM SILK

DRILL



ALL

NOTE

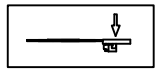
1. LED-WHITE

PART NAME	
LUMINANCE	2800-3000MCD
COLOR	TG42\TH41 MIXING

2. SMT TYPE

PLATING TYPE	Au-Ni	
SOLDER CREAM		
WHITE INK		

3. LED TILT ALLOWANCE SPEC : ±3°
4. LED PAD THICKNESS : MAX 0.05mm
5. SMT SOLDERING BONDER
6. LED SOLDER PAD DESIGN SHOULD FOLLOW THE LED SPECIFICATION.
7. HALOGEN FREE
8. CRITICAL POINTS : ① - ⑤
9. CUTTING DIRECTION :



10. UNSPECFIED TORELANCE TO BE : ±0.1
11. DO NOT CONTAIN ANY SUBSTANCES WHICH ARE SPECIFIED IN (OQA-2049).
12. Vmax-Vmin≤0.1V.
12. PUSH-PULL EFFORT≥15N.

TOLERANCE TABLE(±)				
DIMENSION	1 GRADE	2 GRADE	3 GRADE	4 GRADE
L<=20	0.05	0.1	0.1	0.2
20< L<=50	0.1	0.15	0.2	0.25
50< L<=100	0.15	0.2	0.25	0.3
100< L<=200	0.2	0.25	0.3	0.5
200< L	0.25	0.3	0.5	0.8
UNLESS OTHERWISE SPECIFIED				

MOLD FRAME	1	MOLD FRAME	LH1070W,WHITE		1	
REF. DESC	PART NO.	DESCRIPTION	MATERIAL	COLOR/FINISH	QT'Y	REMARKS

DRAWN BY	CHECKED BY	APPROVED BY
H. Q. CHU		
2015-06-16		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN mm(INCHES). TOLERANCES ARE: LINEAR ± SEE TABLE ANGELS ± 1° RADII UNLESS NOTED ± 0.10

BOE OPTOELECTRONICS TECHNOLOGY CO., LTD.

MDL TV080WXM-NS0

REF. DESC

ANGLE 1st

SCALE 1:1

SIZE A2

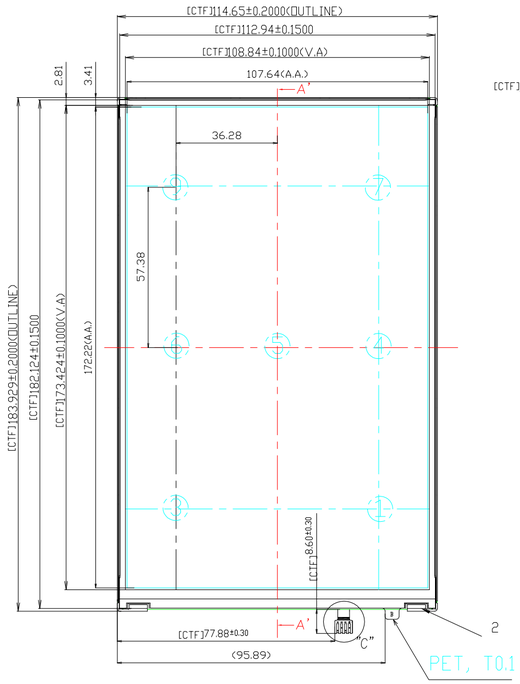
TITLE Light bar

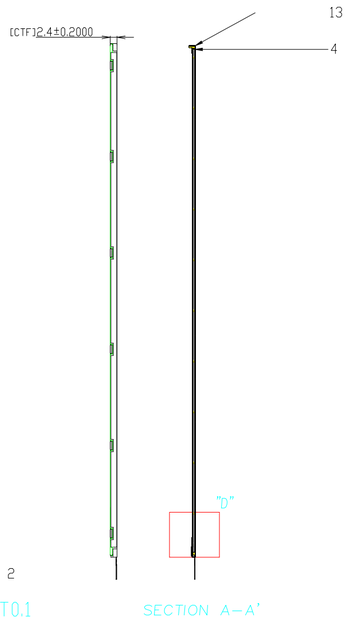
REV P1

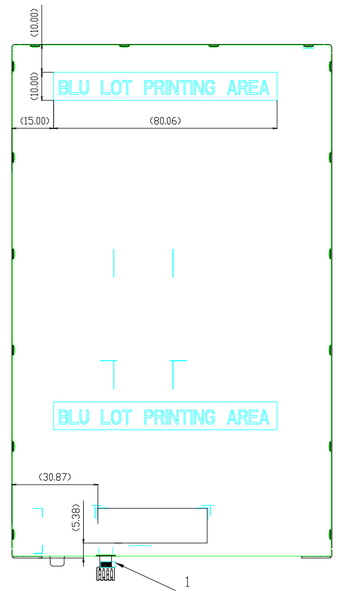
DWG NO. 44-8511346

SHEET 1/1

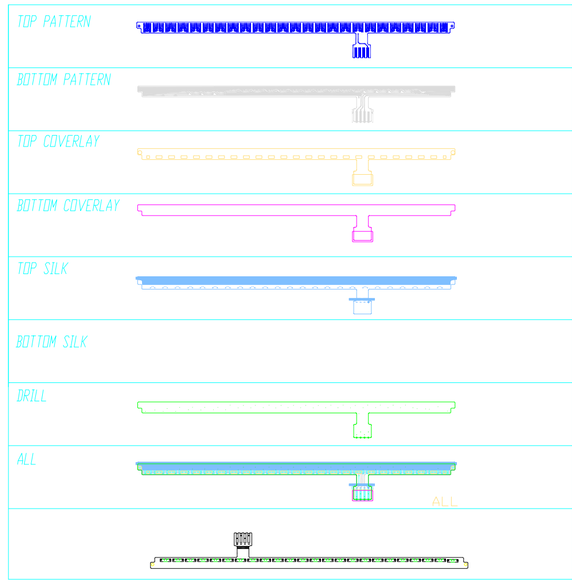
ZONE	LTR	ECN NO.	REVISION	DATE	REVISOR	Approved
	A			2015-06-23	P0	







L/B GERBER

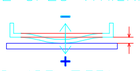


** NOTE **

1. NO SINK AND INJECTION MARK, FLOW LINE AND WELDING LINE TO BE VISIBLE ON APPEARANCE SURFACES
2. DIMENSION ARE FOR FINISHED PART.
3. HEIGHT OF EJECTOR PIN MARK IS -0.1(MAX)
4. BLU WARP / FLATNESS SPEC

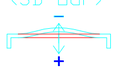
WARP ALLOWANCE SPEC (Thickness Gauge)

TOLERANCE
MAX +0/+0.4

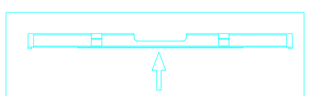


FLATNESS SPEC (3D-DGP)

TOLERANCE
MAX +0/-0.4



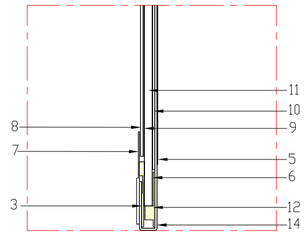
5. UNSPECIFIED TOLERANCE TO BE: ±0.1
6. CRITICAL POINTS: [CTF]
7. EJECTOR PIN DIRECTION:



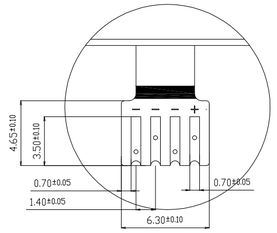
8. BURR ZERO AREA
- SUB LCD AREA AND COMPONENTAREA
- MAIN FPCB BANDING AREA
- PANEL AVOID AREA (AT 4POINT)
- IMAGE:

10. BURR CONTROL
BURR HIGHT: MAX 0.03mm
11. BURR DIRECTION:
IF THE BURR DIRECTION IS OUTSIDE, AND TO CHAMFER OR HALF IMPACTING PROCESSING ON PIERCING AREA OF FPC TOUCH PART.
12. THE CARVING INSIDE TOLERANCE LIMITE: [CTF]±0.05
13. FIELD ANGLE OF BRIGHTNESS AND COLOR MEASUREMENT: 1°
14. CURTAIN TAPE BUBLE CONTRAL SPEC. DO NOT ACCEPTABLE.
15. BLU SPECIFICATION

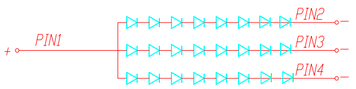
ITEM	SYMBOL	Main. Min.	Main. Typ.	Main. Max.		Remark
**Brightness	Br	8500	9400		cd/m^2	MAIN CENTER POINT
**Chromaticity of Coordinate	Wx	0.284	0.291	0.298		Rhomboid area formed by 4 points. CPK>0.8
	Wy	0.256	0.269	0.282		
**Uniformity	Bu	80	85	-	%	9 POINTS
Input Voltage	VF	2.7	2.9	3.0	V	LED Vf : MAX 3.0 If : 21.7mA
Input Current	IL		21.7		mA	24LEDs, 3CHAINs
Power Consumption	PD	-	-	-	mW	IL x VF (Typ)
LED SPEC	Iv	2,800	2,900	3000	mcd	Luminance:2850k~3050mcd



"D"



"C"



PIN MAP

NO	PART NO	DESCRIPTION	SPECIFICATION	SINGLE MASS	TOTAL MASS	Q'TY	UL NO.	REMARK
14		BACK COVER	SUS 304			1		
13		MOLD FRAME	PC 5010BL			1		
12		LED ASSY	3806			1		
11		LGP	PC HL8002			1		
10		REFLECTOR	LBR160			1		
9		DOWN DIFFUSER	D169S			1		
8		PRISM	LF32-TA210-B21			1		
7		CURTAIN TAPE	5237BH			1		
6		DS FOR LB&LGP	631S+FT7831			1		
5		PPCA FIX TAPE	CT050DC			1		
4		LGP FIX TAPE	TESA 4972			1		
3		LB REF. TAPE	TESA4972, T005+R005, T01+BDW 3525B			1		
2		MF TAPE				2		
1		FPC FIX TAPE	3M 8010			1		
0		ASSY B/L	8 WXGA, 24LED			1		

MASS

TOLERANCE TABLE(±)

DIMENSION	1 GRADE	2 GRADE	3 GRADE	4 GRADE
L<=20	0.05	0.1	0.1	0.2
20< L<=50	0.1	0.15	0.2	0.25
50< L<=100	0.15	0.2	0.25	0.3
100< L<=200	0.2	0.25	0.3	0.5
200< L	0.25	0.3	0.5	0.8

UNLESS OTHERWISE SPECIFIED

DRAWN BY	CHECKED BY	APPROVED BY
H. Q. CHU		
2015-06-23		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN mm(INCHES) TOLERANCES ARE: LINEAR ANGELS ± SEE TABLE ± 1° RADII UNLESS NOTED ± 0.10

BOE OPTOELECTRONICS TECHNOLOGY CO., LTD.

MDL TV080WXM-NS0-32P0

REF. DESC

ANGLE

SCALE 1/1

TITLE: BLU DRAWING

REV P0

SIZE A1

DWG NO. 44-8001896

SHEET 1/1