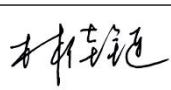
SPECIFICATION
FOR
IPS043A104R
Customer Approval:

	SIGNATURE	DATE
PREPARED BY		2021.03.12
CHECKED BY		2021.03.12
APPROVED BY		2021.03.12

Notes:

1、Please contact GTK before assigning your product based on this module specification.

2、To improve the quality of product, and this product specification is subject to change without any notice.

Rev No.	Rev date	Contents	Remarks
O	2021.03.12	First release	Preliminary

CONTENTS

1. Product Introduce

This solution is suitable for multiple market segments and display application, is perfect for retail self-service, POS kiosks, door entry, conditional access, casino, industrial automation, and embedded application.

2. LCD Specification

No.	Item	Contents	Unit
1	LCD size	4.3 inch (Diagonal)	/
2	LCD type	IPS/Normally Black/Transmissive	/
3	Viewing direction(eye)	FREE	/
4	Gray scale inversion direction	/	/
5	Resolution(H*V)	480 *272 Pixels	/
6	Module size (L*W*H)	105.40*67.10*2.95	mm
7	Active area (L*W)	95.04*53.86	mm
8	Pixel pitch (L*W)	0.198*0.198	mm
9	Interface type	HD display	/
10	Power supply	Micro USB 5V	
11	Module power consumption	TBD	
12	Back light type	LED	/
13	Weight	TBD	g

3. Touch Panel Specification

No.	Item	Description
1	Type	Capacitive touch
2	Power	5V
3	Support finger number	5 Point
4	Touch System Interface	Micro USB

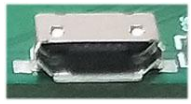
4. Backlight Characteristics

(at Ta=25°C,RH=60%)

Item	Symbol	Min.	Typ.	Max.	Unit	Note
LED forward voltage	VF	16.2	18	19.2	V	IF=20*2mA
LED forward current	IF	-	40	-	mA	
LED power consumption	PLED	-	0.72	-	W	Note1
Number of LED	-		12		PCS	
Connection mode	-	6 in series 2 in parallel			/	
LED life-time	-	20000	-	-	Hrs	Note2

5. Interface Definition

5.1 Power Supply Interface（Power）



Micro USB

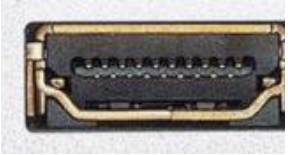
Pin No.	Symbol	Description
1	VBUS	Power supply 5V
2	NC	NC
3	NC	NC
4	NC	NC
5	GND	Ground

5.2 Touch Panel Interface（TP）

Micro USB

Pin No.	Symbol	Description
1	VBUS	Power supply 5V
2	D-	USB data-
3	D+	USB data+
4	NC	NC
5	GND	Ground

5.3 HDMI Interface



HDMI TYPE-A

Pin No	Symbol	Pin No	Symbol
1	TMDS Data 2+	11	GND
2	GND	12	TMDS Clock -
3	TMDS Data 2-	13	CEC
4	TMDS Data 1+	14	Reserved
5	GND	15	SCL
6	TMDS Data 1-	16	SDA
7	TMDS Data 0+	17	GND
8	GND	18	+5V
9	TMDS Data 0-	19	Hot Plug Detect
10	TMDS Clock +		

6. Electronic Characteristics

Item	Test condition	Min	Typ	Max	Unit
Working voltage	25℃	5	5	6	V
Working current	25℃	-	TBD	-	mA

7. Environment Characteristics

Item	Test Environmental	Min	Typ	Max	Unit
Operation temperature	VDD=5V，Humidity 60%	-20	25	70	℃
Storage temperature	VDD=5V，Humidity 60%	-30	25	80	℃
Humidity	25 ℃	10%	60%	90%	RH

8. ELECTRO-OPTICAL CHARACTERISTICS

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Response time	Tr+ Tf	-	-		40	ms	Note 4
Contrast ratio	Cr		550	650	-	-	Note 1
Surface luminance	Lv	θ=0°	200	250	-	cd/m^2	Note 2
Luminance uniformity	Yu	θ=0°	75	80	-	%	Note 3
NTSC	-	θ=0°	-	50	-	%	Note 5
Viewing angle	θ	∅=90°	80	85	-	deg	Note 6
		∅=270°	80	85	-	deg	
		∅=0°	80	85	-	deg	
		∅=180°	80	85	-	deg	
CIE (x,y) chromaticity	Red x	θ=0° ∅=0° Ta=25°C	Typ -0.04	0.5870	Typ +0.04	-	Note 5
	Red y			0.3468		-	
	Green x			0.3680		-	
	Green y			0.5741		-	
	Blue x			0.1547		-	
	Blue y			0.1065		-	
	White x			0.3283		-	
	White y			0.3579		-	

Note1.Definition of contrast ratio

Contrast ratio(Cr) is defined mathematically by the following formula.

For more information see FIG.2.

Contrast ratio= $\frac{\text{Luminance measured when LCD on the “White” state}}{\text{Luminance measured when LCD on the “Black” state}}$

Measured at the center area of the LCD

Note2.Definition of surface luminance

Surface luminance is the luminance with all pixels displaying white.

For more information see FIG.2.

Lv = Average Surface Luminance with all white pixels(P1,P2,P3, ...,Pn)

Note3.Definition of luminance uniformity

The luminance uniformity in surface luminance is determined by measuring luminance at each test position 1 through n, and then dividing the maximum luminance of n points luminance by minimum luminance of n points luminance.For more information see FIG.2.

Yu $\frac{\text{Minimum surface luminance with all white pixels (P1,P2,P3,.....,Pn)}}{\text{Maximum surface luminance with all white pixels (P1,P2,P3,.....,Pn)}}$

Note4. Definition of response time

The response time is defined as the LCD optical switching time interval between “White” state and “Black”state.Rise time (T_{ON}) is the time between photo detector output intensity changed from 90% to 10%. And fall time (T_{OFF}) is the time between photo detector output intensity changed from 10% to 90%.

For additional information see FIG1.

Note5. Definition of color chromaticity (CIE1931)

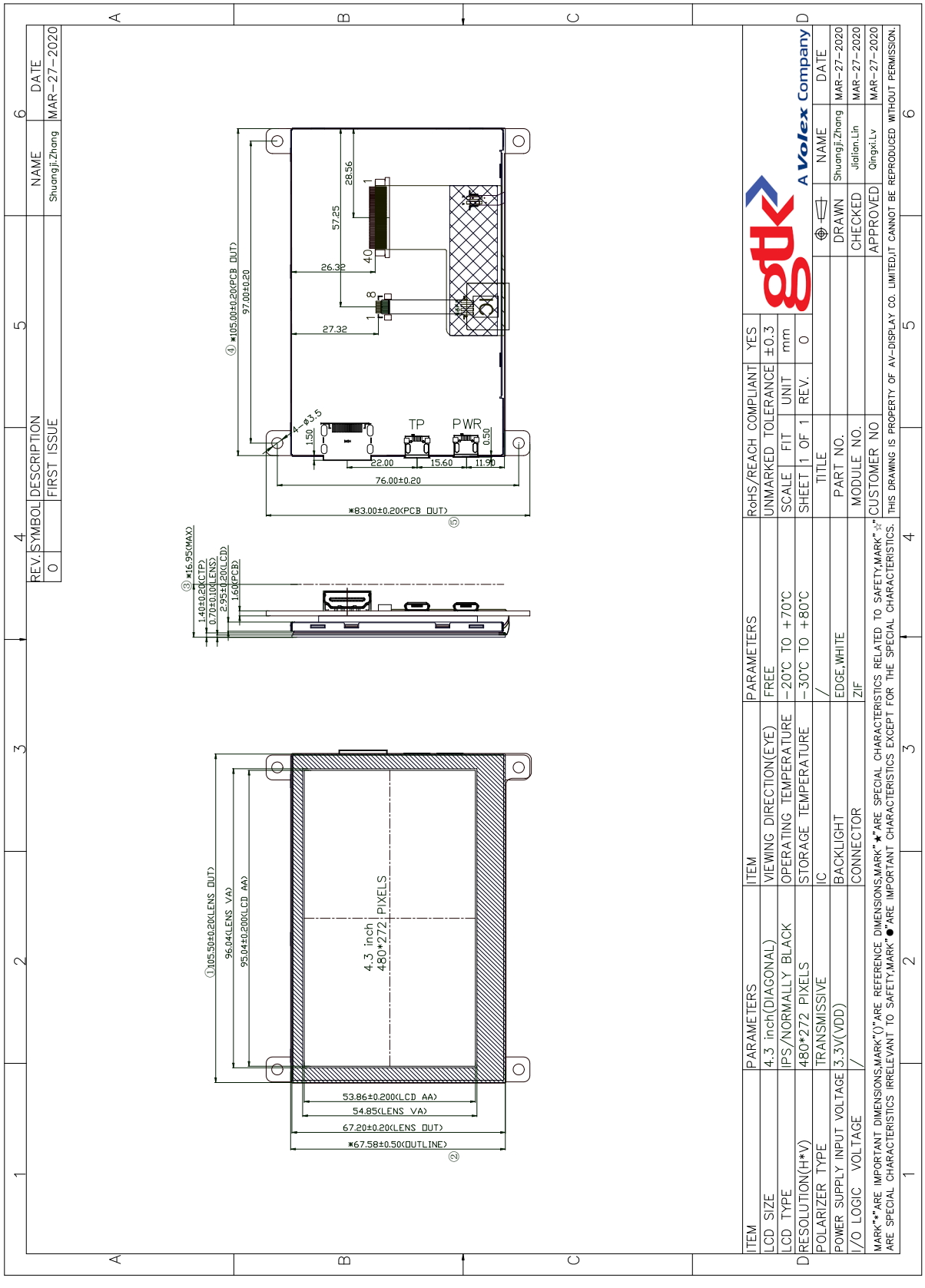
CIE (x,y) chromaticity,The x,y value is determined by screen active area center position P5.For more information see FIG.2.

Note6. Definition of viewing angle

Viewing angle is the angle at which the contrast ratio is greater than 10. angles are determined for the horizontal or x axis and the vertical or y axis with respect to the z axis which is normal to the LCD surface. For more information see FIG.3.

For viewing angle and response time testing, the testing data is base on Autronic-Melchers’s ConoScope or DMS series Instruments or compatible. For contrast ratio, Surface Luminance, Luminance uniformity and CIE,the testing data is base on TOPCON’s BM-5or BM-7 photo detector or compatible.

9. Mechanical Structure



10. RELIABILITY TEST CONDITIONS

<table>
<tr><th>No.</th><th>Test item</th><th colspan="2">Test condition</th><th>Inspection after test</th></tr>
<tr><td>10.1</td><td>High temperature storage test</td><td colspan="2">+80C/240 hours</td><td rowspan="13">Inspection after 2~4hours storage at room temperature, the sample shall be free from defects :
1.Current changing value before test and after test is 50% larger;
2. Function defect : Non-display,abnormal-display,missing lines, Short lines,ITO corrosion;
3.Visual defect : Air bubble in the LCD,Seal leak,Glass crack.</td></tr>
<tr><td>10.2</td><td>Low temperature storage test</td><td colspan="2">-30°C/240 hours</td></tr>
<tr><td>10.3</td><td>High temperature operating test</td><td colspan="2">+70°C/120 hours</td></tr>
<tr><td>10.4</td><td>Low temperature operating test</td><td colspan="2">-20°C/120 hours</td></tr>
<tr><td>10.5</td><td>Temperature cycle storage test</td><td colspan="2">-30°C ~ 25°C ~ +80°C/10cycles
(30min.) (10min.) (30min.)</td></tr>
<tr><td>10.6</td><td>High temperature high humidity test</td><td colspan="2">+50°C*90% RH/120 hours</td></tr>
<tr><td>10.7</td><td>Vibration test</td><td colspan="2">Frequency : 250 r/min
Amplitude : 1 inch
Time: 45min</td></tr>
<tr><td rowspan="5">10.8</td><td rowspan="5">Drop test</td><td colspan="2">Drop direction:
1 corner/3 edges/6 sides 10 time</td></tr>
<tr><td>Packing weight(kg)</td><td>Drop height(cm)</td></tr>
<tr><td>〈11</td><td>80±1.6</td></tr>
<tr><td>11≦G〈21</td><td>60±1.2</td></tr>
<tr><td>21≦G〈31</td><td>50±1.0</td></tr>
<tr><td>31≦G〈40</td><td>40±0.8</td></tr>
<tr><td>10.9</td><td>ESD test</td><td colspan="2">Air discharge: ±8KV, 10time
Contact discharge: ±4KV, 10time</td></tr>
</table>

Remark :

1.The test samples should be applied to only one test item.

2.Sample size for each test item is 3~5pcs.

3.For High temperature high humidity test, Pure water(Resistance>10MΩ) should be used.

4.In case of malfunction defect caused by ESD damage, if it would be recovered to normal state after resetting, it would be judged as a good part.

5.B/L evaluation should be excepted from reliability test with humidity and temperature: Some defects such as black spot/blemish can happen by natural chemical reaction with humidity and Fluorescence B/L has.

6.Failure judgment criterion: Basic specification, Electrical characteristic, Mechanical characteristic, Optical characteristic.

11. INSPECTION CRITERION

11.1 Objective

The TFT test criterion are set to formalize TFT quality standards for AVD with reference to those of the customer for inspection, release and acceptance of finished TFT products in order to guarantee the quality of TFT products required by the customer.

11.2. Scope

The criterion is applicable to all the TFT products manufactured by AVD.

11.3. Equipment for Inspection

Electrical tester, electrical testing machines, vernier calipers, microscopes, magnifiers, anti-static wrist straps, finger cots, labels, tri-phase cold and hot shock machine, constant temperature and humidity chamber, backlight table, ovens for high-low temperature experiments, refrigerators, constant voltage power supply (DC), desk Lamps, etc.

11.4. Sampling Plan and Reference Standards

11.4.1 Sampling plan :

Refer to National Standard GB/T 2828.1---2012/ISO2859-1:1999, level II of normal levels :

Major defect: AQL 0.4

Minor defect: AQL 1.0

11.4.2 GB/T 2828.1---2012/ISO2859-1:1999 Sampling check procedure in count

11.4.3 GB/T 18910. Standard for LCM parts

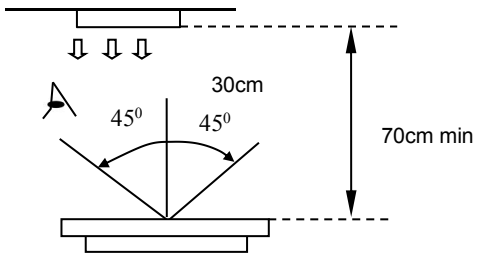
11.4.4 GB/T24213-2008 Basic Environmental Test Procedures for Electrical and Electronic Products

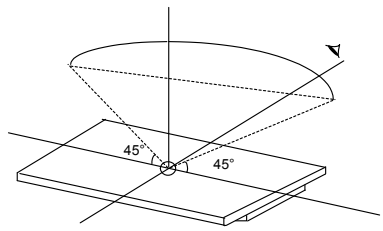
11.4.5 IPC-A-610E Acceptability of Electronic Assemblies

11.5. Inspection Conditions and Inspection Reference

11.5.1 Cosmetic inspection: shall be done normally at 23±5℃ of the ambient temperature and 45~75%RH of relative humidity, under the ambient luminance between 500lux~1000lux and at the distance of 30cm apart between the inspector's eyes and the LCD panel and normally in reflected light. For backlight LCM, cosmetic inspection shall be done under the ambient luminance less than 100lux with the backlight on.

11.5.2 The TFT shall be tested at the angle of 45°left and right and 0-45° top and bottom as the following picture showing:





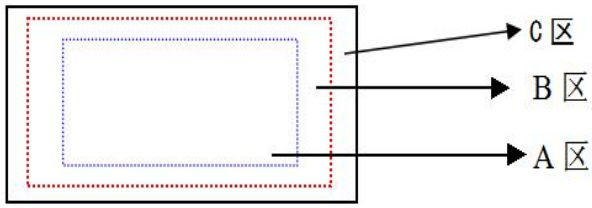
11.5.3 Definition of viewing area(VA)

A area : Active area(AA area)

B area : Viewing area(VA area)

C area : Non-viewing area(not viewing after customer assembly)

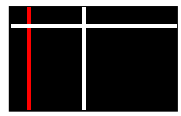
If there is any appearance viewing defect which do not affect product quality and customer assembly in C area, it's accepted in generally.
The criteria apply to A and B area except chipping and crack.

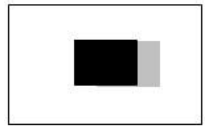
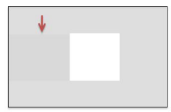


11.5.4 Inspection with naked eyes(exclusive of the inspection of the physical dimensions of defects carried out with magnifiers)
11.5.5 ND card use method(refer to right conner image) and scope: Multi-bright dot; Mura(Black/Gray pattern uneven); dark line and so on.
11.5.6 Undefined items or other special items, refer to mutual agreement and limited sample.If criterion does not match product specifications/ technical requirement, both should be subject to special inspection criterion agreed by customer.

11.6. Defects and Acceptance Standards

11.6.1 Electrical properties test
11.6.1.1 Test voltage(V) : Refer to the instruction of testers and the product specification or drawing and the display content and parameters and display effects shall conform to the product specification and drawing.
11.6.1.2 Current Consumption(I) : Refer to approved product specifications or drawings.
11.6.1.3 Function items(Defect category : MA.)

No.	Defects	Descriptions	Pictures	Inspection method/tools	Defect category
11.6.1.3.1	No display /reaction	shows no picture/display in normal connected situation.		Naked eyes/ testers	MA.
11.6.1.3.2	Missing segment	Shows missing lines in normal display		Naked eyes/ testers	MA.
11.6.1.3.3	Dark line	Only visible on gray pattern, 1 or more vertical/horizontal lines:5%ND,not visible,OK	/	Naked eyes/ testers	MA.
11.6.1.3.4	POL angle defect	Not accepted		Naked eyes/ testers	MA.

11.6.1.3.5	Image retention (sticking)	Chess pattern stays for 30mins and change to 50% gray pattern,disappear time <10s, OK; if time>10s, NG		Naked eyes/ testers	MA.
11.6.1.3.6	Flicker	Refer to limit sample if essential or flicker value<-30dB(measured by CA310A); OK		Naked eyes/ CA310A	MA.
11.6.1.3.7	Display abnormal	Not accepted		Naked eyes/ testers	MA.
11.6.1.3.8	Cross-talk	Refer to limited sample		Naked eyes/ limited sample	MA.
11.6.1.3.9	Display dim/bright	Refer to limited sample	/	Naked eyes/ limited sample	MA.
11.6.1.3.10	Contrast	Refer to limited sample	/	Naked eyes/ limited sample	MA.
11.6.1.3.11	Huge current	Out of spec, not accepted	/	Ammeter	MA.
11.6.1.3.12	TP function defect	Not accepted	/	Naked eyes/ Touch/ test program	MA.

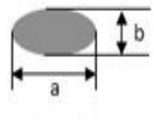
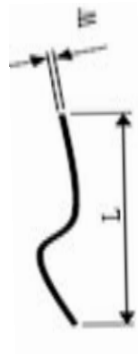
11.6.2 LCD dot/line defect

11.6.2.1 LCD pixel dot defect(defect category : MI.)

Item	**Inspection criterion**		
Size	S<5”	5”≤S<10”	10”≤S<15”
Color pixel dot defect(RGB dot)	1	2	2
2 connected bright dot	0	1	1
3 connected bright dot or more	0	0	1
Bright dot quantity	1	2	3
Random dark dot quantity	2	3	4
2 connected dark dot	1	1	2
3 connected dark dot or more	0	0	0
Dark dot quantity	3	4	5

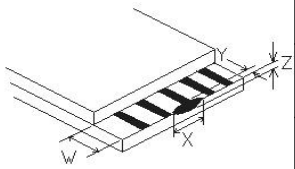
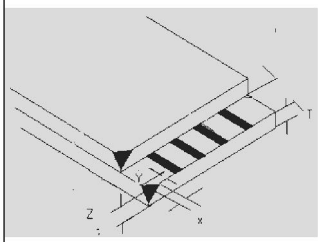
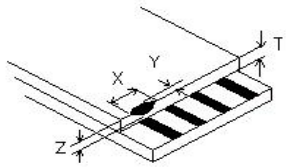
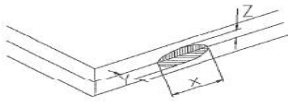
Item	Inspection criterion
Multi-bright dot	ND 3%hidden, OK
Remark: 2 bright dots distance DS≥15mm 2 dark dots distance DS≥5mm 1) Bright dot: Power on TFT and RGB dot in black display 2) Dark dot: Power on TFT and gray or black dot in RGB display 3) Multi-bright dot: Power on TFT and fluorescent tiny dot in black display(only visible in black display)	

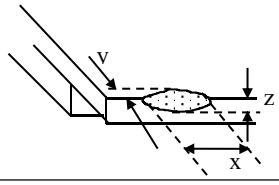
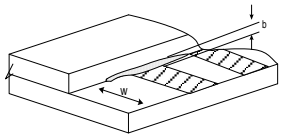
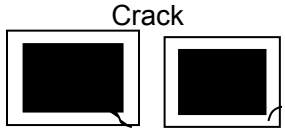
11.6.2.2 LCD appearance dot defect (defect category : MI.)

No.	Item	Inspection criterion				Picture	Inspection method/tools
		Size	S<5”	5’’≤S<10”	10’’≤S<15”		
11.6.2.2.1	Dot defect (black dot, white dot)	D≤0.15	Not count	Not count	D≤0.2mm	 D=(a+b)/2	Naked eyes /film card /magnifier
		0.15<D≤0.25	3	3	Not count		
		0.25<D≤0.30	1	2	0.2~0.35mm		
		0.30<D≤0.35	0	1	Q’ty ≤ 4		
		0.35<D≤0.50	0	0	1		
		D>0.5	0	0	0		
		Remark : D≤0.15mm, not count.Multi-dot as bulk is not accepted. Count dot quantity≤ 5 2 round dots or linear dots in 1 cm is judged as multi-dot.					
11.6.2.2.2	Line defect (visible when power on)	Length (mm)	Width (mm)	S<5”	5’’≤S<10”	10’’≤S<15”		Naked eyes /film card /magnifier
		Not count	W≤0.03	Accepted	Accepted	Accepted		
		L≤5	0.03≤W <0.05	3	3	Not count		
		L≤5	0.05≤W <0.08	0	1	3		
		L≤8	0.05≤W <0.08	0	0	1		
		L>8	W>0.08	0				
		Remark : Invisible when power on,only visible in special angle against light, show as watermark/folding/scratch but can not be touched, no control or refer to keeping sample.					
11.6.2.2.3	Polarizer	Size(mm)		S<5”	5’’≤S<10”	10’’≤S<15”		Naked eyes

	convex-concave dot defect, polarizer bubble defect	D≤0.20	Not count	Not count	Not count		/film card /magnifier
		0.20<D≤0.5	2	2	3		
		0.50<D≤0.8	0	1			
		0.8<D≤1.5	0	0	1		
		D>1.5mm	0	0	0		

11.6.3 Chipping defect

No.	Item	Accepted criterion(mm)				MA.	MI.
11.6.3.1	ITO conductive side 	X	/	≤1/8L	/		√
		Y	Y≤1/6W	1/6W <Y≤1/4W	1/4W <Y		
		Accept	2	2	0		
11.6.3.2	Corner chipping (ITO pins position)	X	/	≤1/6L	/		√
		Y	Y≤1/2W	1/2W <Y≤W	W <Y		
		Accept	2	1	0		
		Corner chipping occurred in sealed edge position as per 6.3.3; at the same time it should not enter into black border of the frame and the corner chipping effect the electric connection position perform as per 6.3.1.					
11.6.3.3	Chipping in sealed area (outside chipping) 	X	/	≤1/8L	/		√
		Y(outside chipping)	Not enter into sealant	Enter Y≤H	H<Y		
		Y(inside chipping)		Enter Y≤1/2H	1/2H<Y		
		Z	≤T	≤1/2T	/		
		Accept	2	1	0		
	 Chipping in sealed area (inside chipping)	The standards of inner and outer chipping on edge sealing area are same. When the chipping occurred in the opposite of stage, Y as per the chipping on the non-conduction side standard in 6.3.1					

11.6.3.4	Conductive side (back side chipping) 	X	/	≤1/6L	/		√
		Y	Y≤1/3W	1/3W <Y≤2/3W	2/3W <Y		
		Accept	2	2	0		
		Chipping into ITO side, refer to 6.3.1					
11.6.3.5	Protruding LCD poor cutting and LCD burrs 	X	/	≤1/8L	/		√
		Y	≤1/6W	1/6W <Y≤1/5W	1/5W <Y		
		Z	/	/	/		
		Accept	1	1	1		
		The outside protruding control as per the tolerance of drawing.					
11.6.3.6	Crack 	Not allow to occur cracks without direction; the crack expand to inside is NG, but to outside is OK (confirmed as per the damaged standard)					√
Remark : X means the length of chipping; Y means the width; Z means the thickness; W means the step width of the two glasses; H means the distance from the glass edge to the sealant inner edge; T means glass thickness.							

11.6.4 Backlight components

No.	Item	Description	Accepted criterion	MA.	MI.
11.6.4.1	No backlight wrong Color	/	Rejected	√	
11.6.4.2	Color deviation	When powered on, the LCD color differs from its sample and found that the color not conforming to the drawing after testing.	Refer to sample and drawing		√
11.6.4.3	Brightness deviation	When powered on, the LCD brightness differs from its sample and is found after testing not conforming to the drawing; or if it conforms to the drawing but the brightness over ±40% than its typical value.	Refer to sample and drawing		√

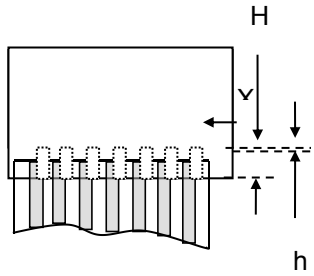
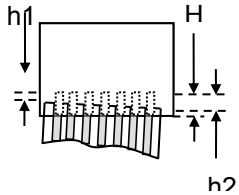
11.6.4.4	Uneven brightness	Uneven on the same LCD and out of the specification of the drawing. The no specification evenness= (the max value-the min value)/ mean value< 70%.	Refer to sample and drawing		√
11.6.4.5	Spot/line/ scratch	When power on, it has dirty spot, scratches and so on spot and line defects.	Refer to 6.2.2		√

11.6.5 Metal frame (Metal Bezel)

No.	Item	Description	Accepted criterion	MA.	MI.
11.6.5.1	Material & surface treatment	Metal frame/surface treatment do not conform to the specifications.	Rejected	√	
11.6.5.2	Tab twist Unconformity/ Tab not twisted	Wrong twist method or direction and twist tabs are not twisted as required.	Rejected	√	
11.6.5.3	Bezel paint loss	1.Front surface : Paint peel off and scratch to the bottom Dot:D≤0.5mm, exceeds 3; Line:L≤3.0mm,W≤0.05mm exceeds 2; 2.Front dent, air bubble and side with paint peeling off scratch to the bottom Dot: D≤1.0mm, exceeds 3; Line:L≤3.0mm,W≤0.05mm, exceeds 2;	Rejected		√
11.6.5.4	Bezel scratch				√
11.6.5.5	Painting peel off, discoloration, dent, and scratch				√
11.6.5.6	Burr	Burr(s) on metal bezel is so long as to get into viewing area.	Rejected		√

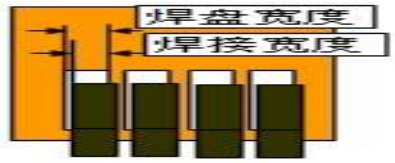
11.6.6 FPC

No.	Item	Description	Accepted criterion	MA.	MI.
11.6.6.1	Model &P/N	Material model & P/N	Keep the same with drawing and technical requirement	√	

11.6.6.2	Dimension/ position	Dimension in drawing spec  Remark: H=ITO pin length f=FPC width W=ITO pin width	f≤1/3w, h ≤1/3H, dimension in drawing spec-> OK Conducive material and ITO/PDA connective area must over than 1/2. Entire dimension must be in spec tolerance.  		√
11.6.6.3	FPC appearance	Hot pressing material get broken, folding line open; FPC golden finger oxidate, broken ,scratch ,foreign material which cause line short	Broken length<2mm; FPC line is OK- > Accepted Crack and line broken->Rejected		√
11.6.6.4	FPC burr	Burr near FPC edge area	When cover line and burr length ≤1.0mm->Accepted		√
11.6.6.5	FPC falling off	FPC bonding area falling off ; silica gel breaking	Rejected		√
11.6.6.6	Sealant missing ITO line	Sealant is not covered all ITO line	Rejected	√	
11.6.6.7	Missing sealant	No sealant	Rejected	√	
11.6.6.8	Sealant	Sealant height ->product total height	Rejected	√	

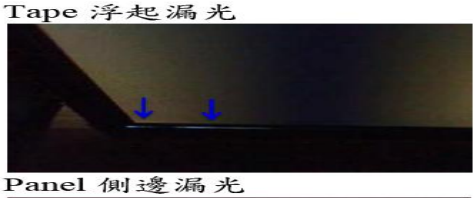
11.6.7 SMT

No.	Item	Description	Accepted criterion	MA.	MI.
11.6.7.1	Soldering bridge	Solder between adjacent pads and components 	Rejected		√
11.6.7.2	Solder ball/splash	Solder ball/tin dross causing short circuit at the solder point. There are active solder ball and splash.	Rejected		√

11.6.7.3	Soldering excursion	Soldering slant > 1/3 soldering pad 	Rejected		√
11.6.7.4	Component wrong attaching	Component on PCB differs with drawing: wrong one, extra one,lack one,opposite polarity	Rejected	√	
		JUMP short circuit on PCB: extra soldering ,lack soldering.	Rejected	√	
11.6.7.5	Component falling off	Soldering but component is missing	Rejected	√	
11.6.7.6	Wrong component	Component model/spec differs from product specification	Rejected	√	

11.6.8 General Appearance

No.	Item	Description	Accepted criterion	MA.	MI.
11.6.8.1	Dimension	According to drawing	Accepted	√	
11.6.8.2	Surface stain	Defect mark or label are not removed residual glue, and finger print,etc;	Rejected		√
11.6.8.3	Assembly foreign material	Dot/linear stain after assembly backlight and diffuse film TP assembly fogy stain	Invisible when power on->OK Refer to 6.2.2 dot/line spec		√
11.6.8.4	Mixture	Different model product in the same shipment	Rejected	√	
11.6.8.5	Product mark	Missing, unclear, incorrect, or misplaced part	Rejected		√
11.6.8.6	Component mark	Silk screen mark clear, resistance measured value in spec	Accepted (Refer to customer special requirement)		√
11.6.8.7	Newton's rings	Area<1/6 screen area quantity≤1	Accepted		√
11.6.8.8	Mura	1.In black display ND 3% invisible ->OK; visible->NG 2.Naked eyes inspection RGB display invisible Black display, area<1/4 screen area	Refer to limited sample 		√

11.6.8.9	Light leak	1.LCD edge(near backlight) shadow by LCD lamps irregular illuminate 2.Judge in black/white/gray display (slight leaky is yellowish,greenish, Tape 浮起漏光  Panel 側邊漏光 	Refer to limited sample		√
11.6.8.10	Polarizer	1.Polarizer slant.Cover VA and not over LCD edge 2.No unmovable stain or finger print in polarizer VA 3.Bubble/warped but not enter VA	Accepted		√
11.6.8.11	TP defect	1.TP crack 2.TP stain(fogy& unremovable) 3.TP glue overflow to VA	Rejected		√

Remark :

Anything which is not clearly defined in 6.5~6.8 should refer to IPC-A-610E.Consumer Electronics, Non-consumer Electronics refer to Ⅰ grade and Industrial,Automobile refer to Ⅱ grade.

11.7 Others

Items not specified in this document or released on compromise should be inspected with reference to mutual agreement and limit samples.