Specification

Driver board model：JD70M6M

Driver board version： VER:1.01

LCD panel model：HE070NA-13B-27H

USER			MANUFACTURER		
QA by	Project by	Approved by	Prepared by	Checked by	Approved by

Catalogue

Version Content

Date	Version	Modified version
2013-06-21	RD001	The first version (Development version)
2013-12-20	VER：1.00	The second version (official version)
2014-10-08	VER：1.01	The third version (official version)

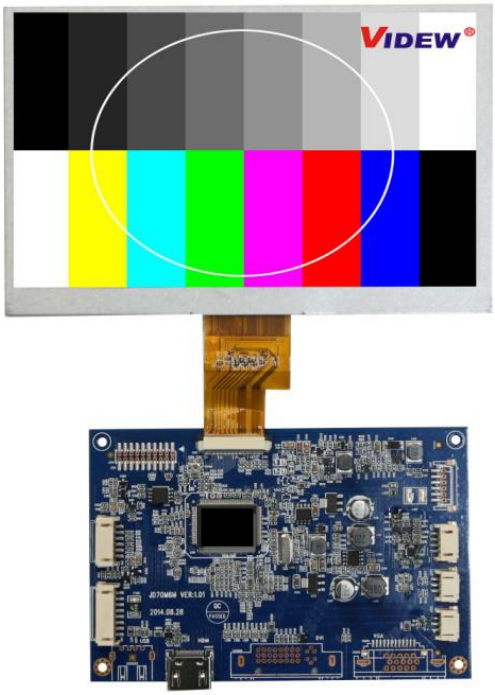
1、Profile:

JD70M6M VER: 1.01-HE070NA-13B-27H color TFT LCD module is composed by JD70M6M VER: 1.01 driver board and HE070NA-13B-27H panel. it can input 2 channel CVBS、1channel VGA、1 channel DVI、1channel HDMI signal; 1channel CVBS output, 2 channel Audio input and output, with PAL and NTSC system format (auto switch), pushbutton adjustment, OSD display. The product is mainly used for car monitor, video door phone, building intercom or other display electronic equipment.

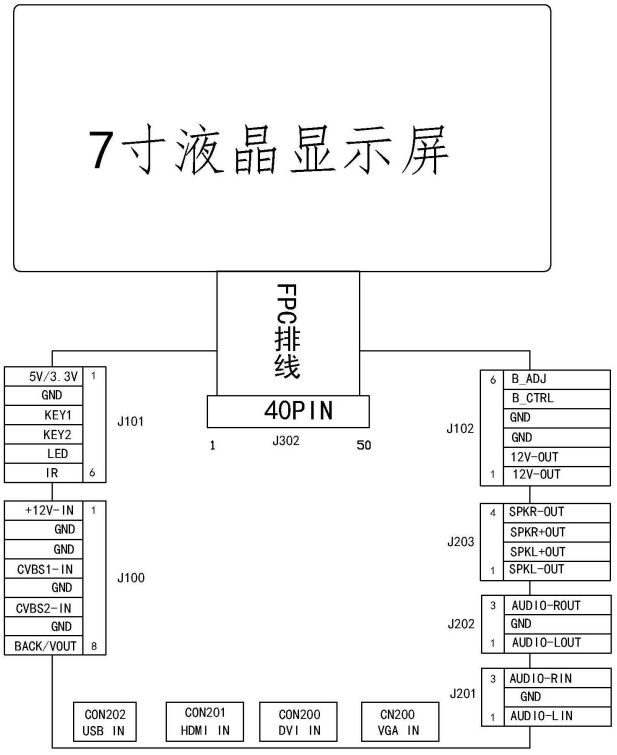
2、Main parameter:

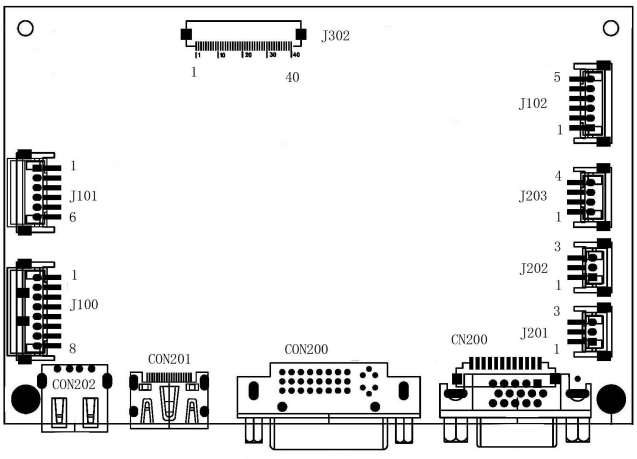
No.	Item	Description	Remark
1	Size	7.0inch	
2	Display ratio	16:9	
3	Backlight	LED	
4	Brightness	180-230 cd/m^2	
5	Resolution	1024×3 (RGB)×600	
6	View angle（U、D、L、R）	（60 / 65 / 65 / 65）	
7	Display dimension	165.75（W）×105.39（H）×3.0（D）mm	
8	Effective display area	153.6（W）×90.0（H）mm	
9	Driver board dimension	102（W）×70（H）×15.78(D) mm	
14	Working Voltage(Ripple is less than)	Min:DC9V; S:DC12V; Max:DC15V;	
15	Working current（DC 12V）	DC430mA±30mA	
16	Power Consumption	5.16W（TYP）	
17	Start time	≤5s（Boot screen）≤10s（into the channel screen）	
18	Work temperature	-10℃~60℃	
19	Storage temperature	-20℃~70℃	
20	Environment humidity	5~90％RH	

3、Product picture:



4、Wiring diagrams:





5、Driver board connector definition：

5.1 、J100 connector definition：（8PIN 2.0mm）

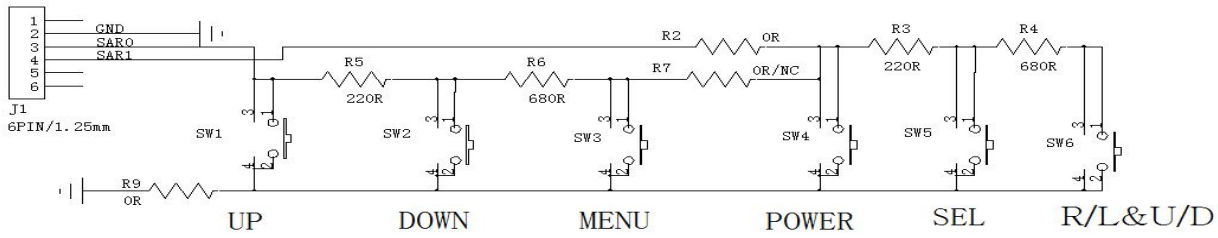
Pin No.	Symbol	I/O/P	Description	Remarks
1	+12V-IN	I	DC power input	9V~15V
2	GND	P	Ground	
3	GND	P	Ground	
4	VIDEO1-IN	I	Video signal 1 input	0.5V~1.5V_{P-P}
5	GND	P	Ground	
6	VIDEO2-IN	I	Video signal 2 input	0.5V~1.5V_{P-P}
7	GND	P	Ground	
8	BACK/VOUT	I/O	Reversing control input / video output	Reversing control voltage is 12V / video output 0.2V~1.2V_{P-P}

5.2、J101 connector definition：（6PIN 2.0mm）

Pin No.	Symbol	I/O/P	Description	Remarks
1	5V/3.3V	O	3.3Vdirect-current output	
2	GND	P	GND	
3	KEY1	I	KEY 1 input	
4	KEY2	I	KEY 2 input	
5	LED	O	Main board needs to be state indicator output	
6	IR	I	Infrared remote control signal input	

5.2.1、Pushbutton board SJD-KEY

5.2.2、Pushbutton board wiring diagram：



5.2.3、Pushbutton function description：

SW1 (UP): Volume up key, the key is menu upward under main menu mode, parameter multiply key.

SW2 (DOWN): Volume down key, the key is menu downward under main menu mode, parameter descending key.

SW3（MENU）: Menu key, press the key to enter main menu.

SW4（POWER）: Standby button and power button. Press the key to boot state if screen is standby mode. Click this button to enter standby state if the screen is opening state.

SW5（SEL）:Switch key，this key is video channel switch button.

5.3、VGA、DVI、HDMI interface parameters.

5.3.1、Compatible with HDMI version：HDMI 1.3/1.4，compatible with HDCP 1.2
Supported formats are HDMI 3D input、HDMI 4Kx2K input、HDMI ARC

5.3.2、Compatible with DVI version：DVI 1.0，Supported high resolution 1920x1080@60HZ and 1600x1200@60HZ

5.3.3、Supported computer RGB input, Supported resolutions 800x600@60HZ-1280x768@60HZ

5.4 、J302 connector definition：

Pin No.	Symbol	I/O	Function	Remark
1	VCOM	P	Common Voltage	
2	VDD	P	Power Voltage for digital circuit	
3	VDD	P	Power Voltage for digital circuit	
4	NC	--	No connection	
5	Reset	O	Global reset pin	
6	STBYB	O	Standby mode, Normally pulled high STBYB = “1”, normal operation STBYB = “0”, timing controller, source driver will turn off, all output are High-Z	
7	GND	P	Ground	
8	RXIN0-	O	-LVDS differential data input	
9	RXIN0+	O	+ LVDS differential data input	
10	GND	P	Ground	
11	RXIN1-	O	-LVDS differential data input	
12	RXIN1+	O	+ LVDS differential data input	
13	GND	P	Ground	
14	RXIN2-	O	-LVDS differential data input	
15	RXIN2+	O	+ LVDS differential data input	
16	GND	P	Ground	
17	RXCLKIN-	O	-LVDS differential clock input	
18	RXCLKIN+	O	+ LVDS differential clock input	
19	GND	P	Ground	
20	RXIN3-	O	-LVDS differential data input	
21	RXIN3+	O	+ LVDS differential data input	
22	GND	P	Ground	
23	NC	--	No connection	
24	NC	--	No connection	
25	GND	P	Ground	

26	NC	--	No connection	
27	DIMO	O	Backlight CABC controller signal output	
28	SELB	O	6bit/8bit mode select	
29	AVDD	P	Power for Analog Circuit	
30	GND	P	Ground	
31	LED-	P	LED Cathode	
32	LED-	P	LED Cathode	
33	L/R	O	Horizontal inversion	
34	U/D	O	Vertical inversion	
35	VGL	P	Gate OFF Voltage	
36	CABCEN1	O	CABC H/W enable	
37	CABCEN0	O	CABC H/W enable	
38	VGH	P	Gate ON Voltage	
39	LED+	P	LED Anode	
40	LED+	P	LED Anode	

I: input, O: output, P: Power

5.5、J102 connector definition：（6PIN 2.0mm）

Pin No.	Symbol	I/O/P	Description	Remarks
1	12V-OUT	O	12V DC output	
2	12V-OUT	O	12V DC output	
3	GND	P	GND	
4	GND	P	GND	
5	B-CTRL	O	Backlit switch signal output	
6	B-ADJ	O	Backlight brightness adjustment output	

5.6、J201 connector definition：（3PIN 2.0mm）

Pin No.	Symbol	I/O/P	Description	Remarks
1	AUDIO-LIN	I	Left channel audio input	0.1V~1.0V_{P-P}
2	GND	P	GND	
3	AUDIO-RIN	I	Right channel audio input	0.1V~1.0V_{P-P}

5.7、J202 connector definition：（3PIN 2.0mm）

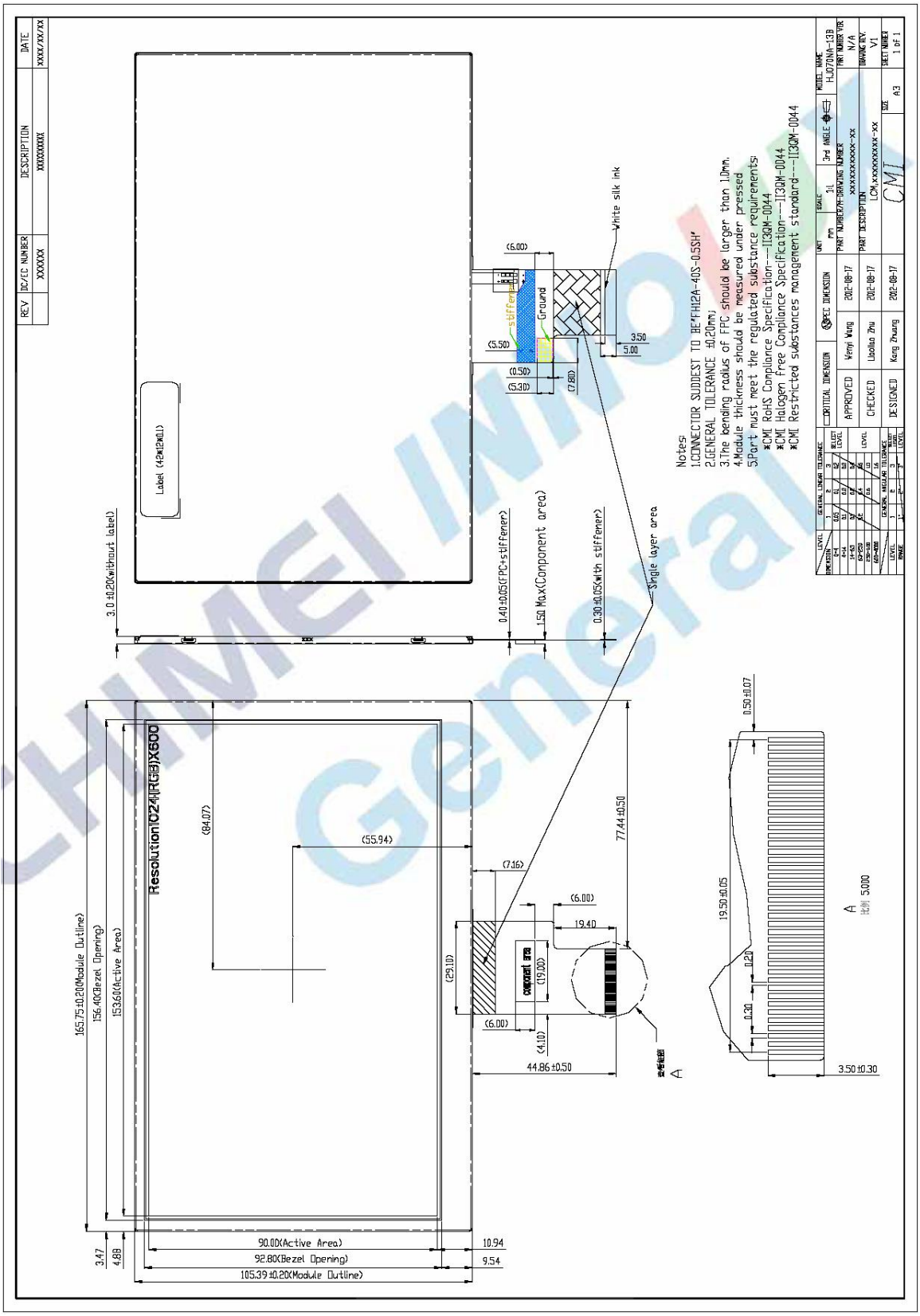
Pin No.	Symbol	I/O/P	Description	Remarks
1	AUDIO-LOUT	O	Left channel audio output	
2	GND	P	GND	
3	AUDIO-ROUT	O	Right channel audio output	

5.8、J203 connector definition：（4PIN 2.0mm）

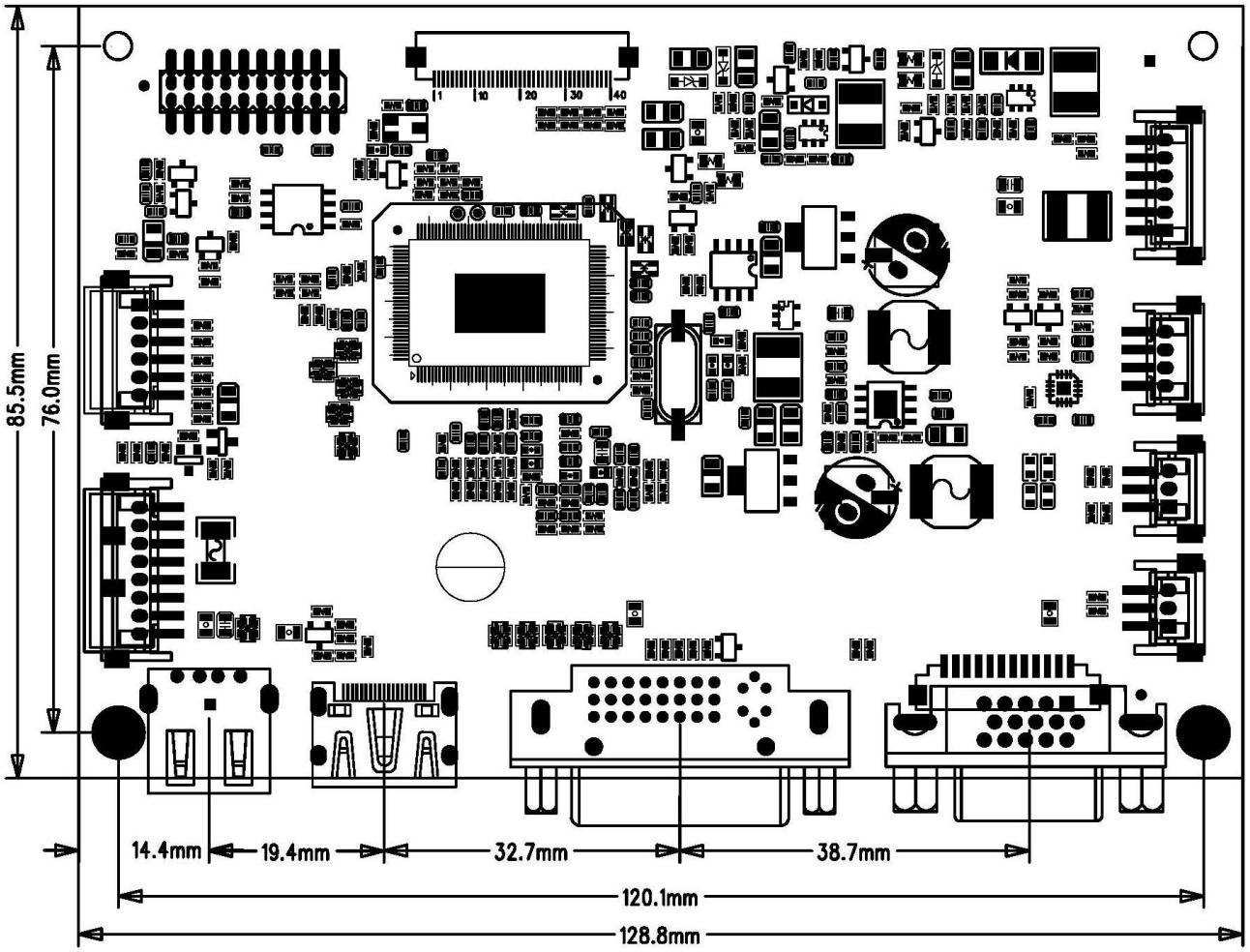
Pin No.	Symbol	I/O/P	Description	Remarks
1	SPK-L-OUT	O	Left speaker negative output	8Ω~1.25W 4Ω~1.9W
2	SPK-L+OUT	O	Left speaker positive output	
3	SPK-R+OUT	O	Right speaker positive output	8Ω~1.25W 4Ω~1.9W
4	SPK-R-OUT	O	Right speaker negative output	

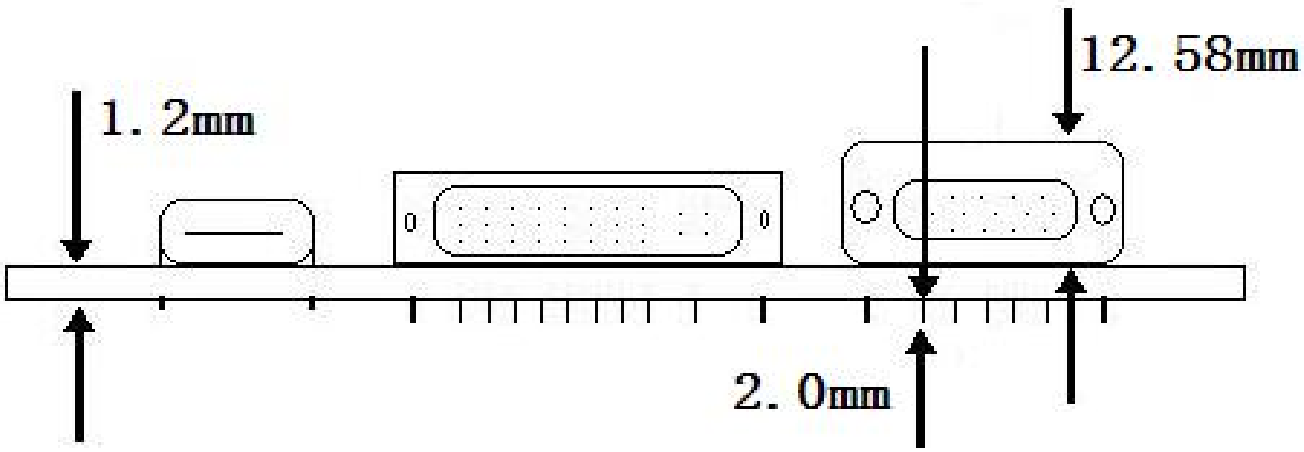
6、Structural diagram:

6.1、TFT LCD Panel:



6.2、PCB dimension：102 (W)×70(H) ×15.78(D)mm（with VGA）





7 、Product labeling:

HE070NA-13B-27H

8、 Packaging, transportation and storage

1、Delivery package

TBD

2、Transport and storage

Don’t hit and rain when transportation； Don’t storage with chemic goods and wet goods together.

9、 JD70M6M precaution

10、 1. TFT have used by special instrument to adjust precision and aging、test before leave factory, no need adjust again.

11、 2. Please correctly connect power、video signal before you adjust, should be on/off power and video signal to check the image’s effect.

12、 3. Due to this product is electronic product, please notice prevent static.

13、 4. 7.0”TFT-LCD Panel is a glasswork, place carefully, broken for fear.

14、 5、Don’t touch pushbutton’s pin feet when you adjust potentiometers, due to Person have resistance, you will effect pushbutton’s function when touch it.

10、7"TFT- LCD PANEL Inspection standard:

Aim: Make the panel standards to material purchasing, process inspecting and customer checking.

Ranges: 7.0″TFT LCD

Content

10.1、Determinant standard and method:

10.1.1. The method and determinant of inspecting the nick of panel of LCD：

10.1.1.1. Inspect vertically (or at 45°angle from left/right) under the light tube (the power is 20W) in the distance of 30cm to the panel. If there is no nick, it determines “OK”, otherwise “NG”.

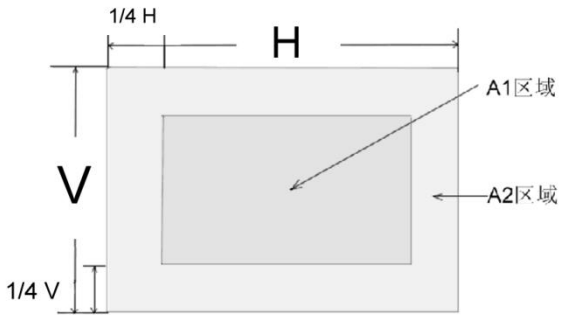
10.1.2. The method and determinative for black & white & color spots for the Panel of LCD:

10.1.2.1. Inspecting method

10.1.2.1.1. Black spots：under the situation of “turn on the light”，set the MASK of black spot inspection near the black spot then compare the big and small by eyes.

10.1.2.1.2. White & Color spots: under situation of “turn on the light”, set the Mask of black spot inspection on the white spot (or color spot) then observe them by eyes if it can hide.

10.1.2.2. Division of LCD Panel



Remark: Area of A1:The center of the available area for the picture

Area of A2: The edge of the available area for the picture (around area)

10.1.3、The inspection standard for the spots of LCD panel:

Spot Diameter（mm）		Allowed Area	
		A1area	A2area
Black Spot	d≤0.15	irrespective	irrespective
	0.15<d≤0.3	4	4
	0.3<d≤0.5	2	3
	0.5<d<0.8	0	2
White or color spot	d≤0.15	irrespective	irrespective
	0.15<d≤0.3	3	3
	0.3<d≤0.5	1	2
	0.5<d<0.8	0	1

Note:1. Size: Average Diameter=（Max. Diameter + Min. Diameter）/2
2. Using information above as a standard in order to judge while the spot is are dense.
3. Black & White spot：To judge the obvious spots through the change of voltage by comparison.
4. Total quantity of Black & white & color spot: A1+A2 ≤ 4.