

产品规格书

Specification

产品名称 (Product) : 7 寸液晶存储模组/7inch Memory LCD Module

驱 动 板 (Driver board): JD78TAV

版 本 号 (Version): VER:1.01

液 晶 屏 (TFT LCD): AT070-DM057-18SG

客 户 名 称 (Customer): _____

客 户 型 号 (Cust.P/N): _____

日 期 (Date): _____

客户 CUSTOMER			承制方 MANUFACTURER		
品质 Quality	工程 Engineer	审批 Approved	审核 Checked	批准 Approved	销售 Sales

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版本更改 Version

日期/Date	版本/Ver.	修改版本/Modification
2012-09-25	RD001	第一版(First Version)
2012-11-16	VER:1.00	第二版(Second Version)
2013-10-30	VER:1.01	第三版(修改时钟电路) Third Version (Changing clock circuit)

1. 概况 Profile:

JD78TAV VER: 1.01-AT070-DM057-18SG 彩色存储驱动模组。由 JD78TAV VER: 1.01 存储驱动板和 (AT070-DM570-18SG) 屏组成。输入 CVBS (PAL) 信号,它具有拍照、录像、存储、支持图片全部删除(最大图片存储容量为 100 张)、能对显示的时间及日期进行设置、同时对图像效果调整、掉电记忆、OSD 时间叠加功能, OSD 菜单通过按键调节。它主要用于可视门铃、楼宇对讲、可视电话等其他显示电子设备。

JD78TAV VER: 1.01-AT070-DM057-18SG LCD module is comprised by JD78TAV VER: 1.01 memory board and (AT070-DM570-18SG) panel。input CVBS (PAL) signal,It can take photo and video and storage and delete all pictures(the picture stores up to 100 pictures)、can setting time and date, and adjust picture quality,power-off memory function and OSD display,the OSD menu is adjusted by pressing the key。It is mainly used for videophone and other display electronic devices.

2. 基本参数 Specifications:

No.	项目/Item	说明/Description	Note
1	液晶屏显示尺寸/LCD Display	7.0 英寸/7inch	
2	显示比例/Display Ratio	16:9	
3	背光方式/Backlight	LED	
4	亮度/Brightness	210~260 cd/m2	
5	解析度/Resolution	800×3(RGB)×480	
6	视角范围 View angle	(50/70/70/70)	
7	液晶屏尺寸/LCD dimension	164.9 (W) × 100.0 (H) × 5.15 (D) mm	
8	有效显示范围/Effect area	154.08 (H) × 3(RGB) × 85.92 (V) mm	
9	驱动板尺寸/Driver board size	102.0 (W) × 50.0 (H) × 9.2 (D) mm	
10	工作电压 (纹波小于 0.3VP-P) Working Voltage (Wave<0.3VP-P)	最小: DC9V; 标准: DC12V; 最大: DC18V; Min:DC9V; Standard: DC12V; Max: DC18V;	
11	工作电流 (DC 12V 供电时) Working Current (DC 12V supply)	DC320mA ±30mA	
12	消耗功率/Power Consumption	3.84W (TYP)	
13	启动时间/Start Time	≤2.0 秒 ≤2.0s	
14	工作温度范围/Working Temp.	-10℃~60℃	
15	储存温度范围/Storage Temp.	-20℃~70℃	
16	环境相对湿度/ENV. Humidity	5~95%RH	

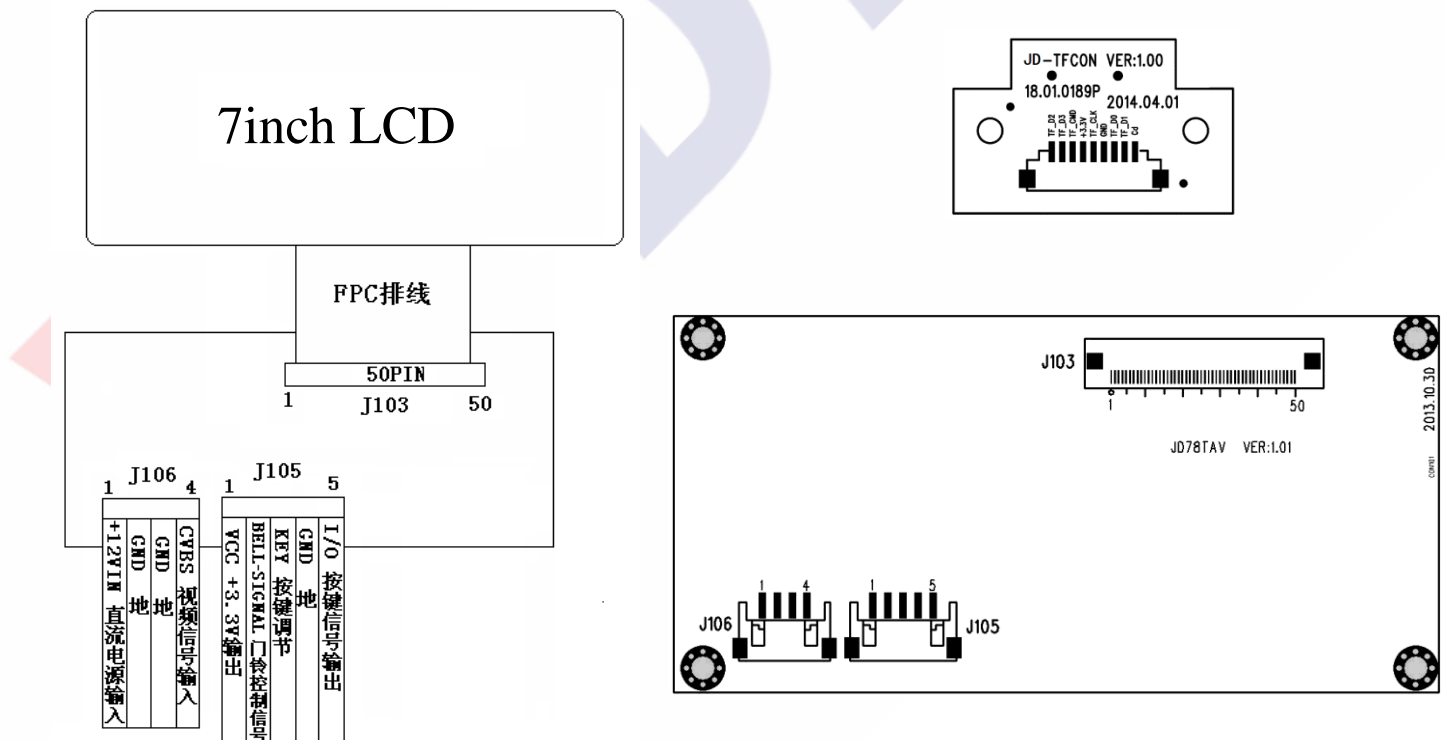
3. 产品图片/Product Picture:



外接 TF 卡槽/Extend TF card slot



4. 连线示意图/Wiring Diagram:



5. 驱动板接口定义/Interface Definition:

5.1. J103 接口定义/J103 Interface Definition:

PIN	Function	I/O/P	脚位定义说明/PIN Definition	Note
1	NC	-	No connection	
2	NC	-	No connection	
3	NC	-	No connection	
4	NC	-	No connection	
5	GND	P	Power ground	
6	Vcom	I	Common voltage	
7	DVDD	P	Power for Digital Circuit	
8	MODE	I	DE/SYNC mode select	
9	DE	I	Data Input Enable	
10	VS	I	Vertical Sync Input	
11	HS	I	Horizontal Sync Input	
12	B7	I	Blue data(MSB)	
13	B6	I	Blue data	
14	B5	I	Blue data	
15	B4	I	Blue data	
16	B3	I	Blue data	
17	B2	I	Blue data	
18	B1	I	Blue data	
19	B0	I	Blue data(LSB)	
20	G7	I	Green data(MSB)	
21	G6	I	Green data	
22	G5	I	Green data	
23	G4	I	Green data	
24	G3	I	Green data	
25	G2	I	Green data	
26	G1	I	Green data	

PIN	Function	I/O/P	脚位定义说明/PIN Definition	Note
27	G0	I	Green data(LSB)	
28	R7	I	Red data(MSB)	
29	R6	I	Red data	
30	R5	I	Red data	
31	R4	I	Red data	
32	R3	I	Red data	
33	R2	I	Red data	
34	R1	I	Red data	
35	R0	I	Red data(LSB)	
36	GND	P	Power Ground	
37	DCLK	I	Sample clock	
38	GND	P	Power Ground	
39	L/R	I	Left / right selection	
40	U/D	I	Up/down selection	
41	VGH	P	Gate ON Voltage	
42	VGL	P	Gate OFF Voltage	
43	AVDD	P	Power for Analog Circuit	
44	RESET	I	Global reset pin.	
45	NC	-	No connection	
46	Vcom	I	Common Voltage	
47	DITHB	I	Dithering function	
48	GND	P	Power Ground	
49	NC	-	No connection	
50	NC	-	No connection	

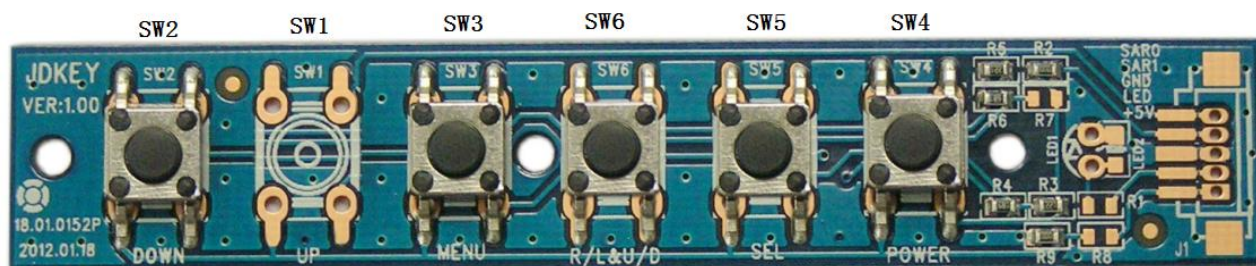
5.2. J106 接口定义/J106 Interface Definition:

PIN	Function	I/O/P	脚位定义说明/PIN Definition	Note
1	+12VIN	I	直流电源输入/DC power input	
2	GND	P	地/Ground	
3	GND	P	地/Ground	
4	CVBS	I	视频信号输入/Video signal input	

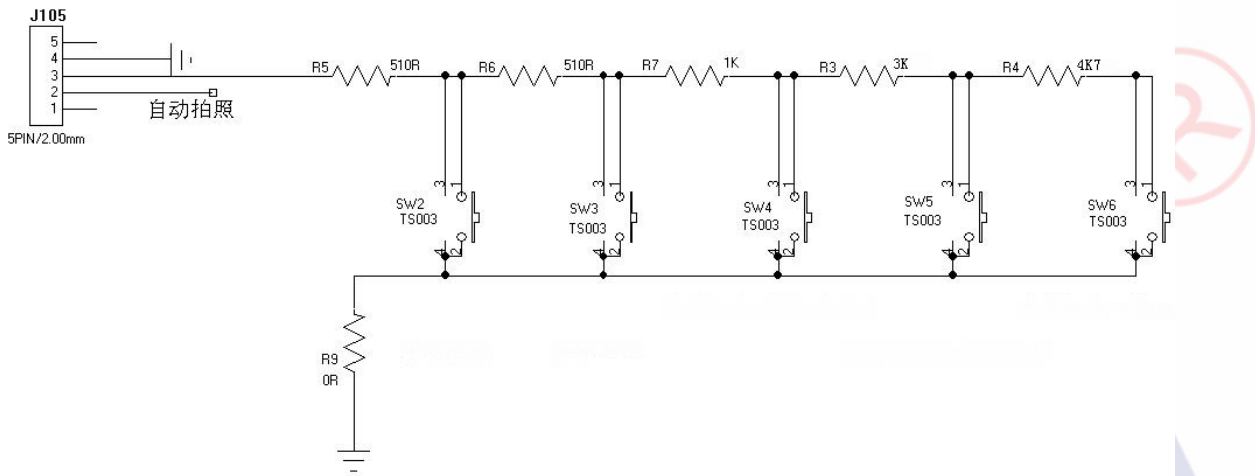
5.3. J105 接口定义/J105 Interface Definition:

PIN	Function	I/O/P	脚位定义说明/PIN Definition	Note
1	VCC	I	+3.3V 输出/+3.3V output	带 LED 指示灯 /For LED indicator light
2	BELL_SIGNAL	I	铃声信号输入/Bell Signal control	信号下降沿时进行拍照/Take photo when level from high to low
3	KEY	I	按键调节/Keyboard adjust	区别于 A/D 采样电压/Distinguish between A/D sampling voltage
4	GND	P	地/Ground	
5	I/O	I	自定义 IO/Keyboard port I/O	

5.3.1. 按键板/SJD-keypad



5.3.2. 按键板接线图/Wiring Diagram of keypad:



5.3.3. 在直通模式下, 按键 SW4 进入菜单界面 (如图 2) / Under normal mode, press SW4 entry this menu (picture 2):

按键 SW5 和按键 SW6 分别进行上和下选择,

Press SW5 and Press SW6 to Up and down choice,

按键 SW2 进行确认操作, 按键 SW3 进行返回操作,

Press SW2 is the confirmation key, Press SW3 is the return key,

按键 SW4 进行切换界面操作。

Press SW4 is switch menu.

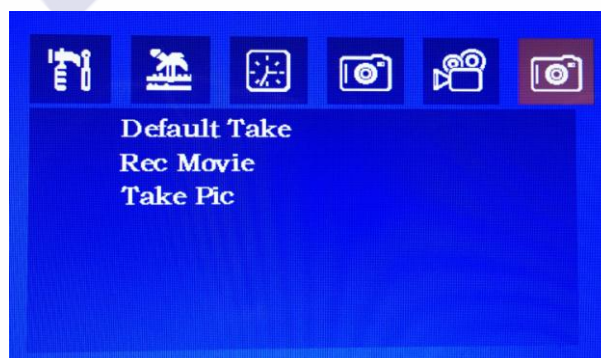


图 2/Picture 2

按键功能说明/Keypad Description:

SW5: 录像播放 此按键可以实现播放录像。在播放过程中, 按键 SW5 播放上一段录像
按键 SW6 播放下一段录像, 按键 SW3 退出播放。录像画面上显示第几段录像, 年/月/日, 小时/分钟/秒。

SW5: Record video This press can play video. When displaying, Press SW5 play last video. Press SW6 to play next video, press SW3 exit play. LCD module will display video section number and date and time when replay.

SW6: 照片浏览 此按键可以实现照片浏览, 在浏览过程中, 按键 SW5 浏览上一张照片, 按键 SW6 浏览下一张照片, 按键 SW6 删除当前的这张照片。按键 SW3 退出浏览。照片上显示 第几张照片/照片总张数, 年/月/日, 小时/分钟/秒。

SW6 :Browse picture Press SW6 entry picture browse, when browsing, press SW5 to browse last picture, press SW6 browse next picture, press SW2 to delete existing picture. Press SW3 to exit browse. LCD module will display picture number/ total pictures and date and time.

注: 新卡装上后录像会提示是否要格式化, 需选择是, 格式化一次 TF 卡。

Remark: when the new TF card is installed, the video will indicate whether to format it, and the choice is to format a TF card.

注: 进入菜单模式后 10S 内无操作自动退出到直通模式, 有掉电记忆存储功能; 进入录像后 10 秒钟退出 (定时); 增加外部拍照功能 (SAN 低电平有效)。

Remark: when entering the menu mode, no operation in 10S automatically exits to the direct mode, and has the power memory storage function. 10 seconds after entering the video (timing); Add external camera function (SAN low level is valid).

5.3.4. 语言选项界面(图 1)/ Language menu(Picture 1)

5.3.4.1. 两种语言可供选择: 中文和英文。

Two language : Chinese and English.

5.3.4.2. 中/英文选项: 按键 SW2 进行中文和英文切换。

Chinese/English: Press SW2 for Chinese and English change.

5.3.4.3. 退出选项: 选择退出选项, 按键 SW2 退出语言设置菜单。

Exit: Choose Exit, press SW3 to exit menu.

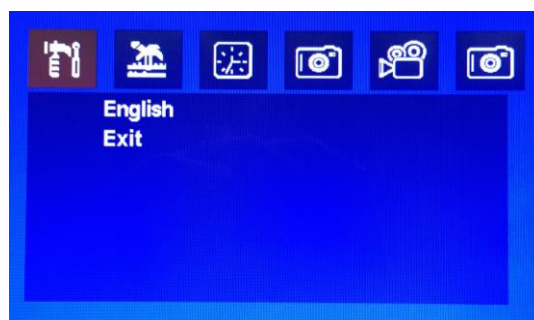


图 1/Picture 1

5.3.5. 图像效果调节菜单（如图 2）/ Parameter for picture adjust (Picture 2)

5.3.5.1. 进入此选项可进行亮度、色度、对比度调节，每项调节范围都是从 0 到 100，默认值为 50。用户可根据个人需求进行图像效果调节。当切换到此菜单时，需按 SW2 确认，才能对数值和选项进行调节。

Entry this menu to adjust brightness and color and contrast, every adjust range is from 0 to 100, Default is 50. You can adjust the image according to the individual demand. When you setting this press, you need press SW2 to confirm, then you can adjust.

5.3.5.2. 选择一个选项后，按键 SW5 和 SW6 分别进行数值加或减操作。

After selecting an option, press SW5 and SW6 to “+” or “-”.

5.3.5.3. 按键 SW6 和 SW5 分别是选项向上和向下选择。

Press SW6 and SW5 are options up and down.

5.3.5.4. 当选择“退出”选项时，按键 SW2 退出当前菜单，或按键 SW3 退出。

when choose “Exit”, press SW2 to exit current menu; or press SW3 to exit.

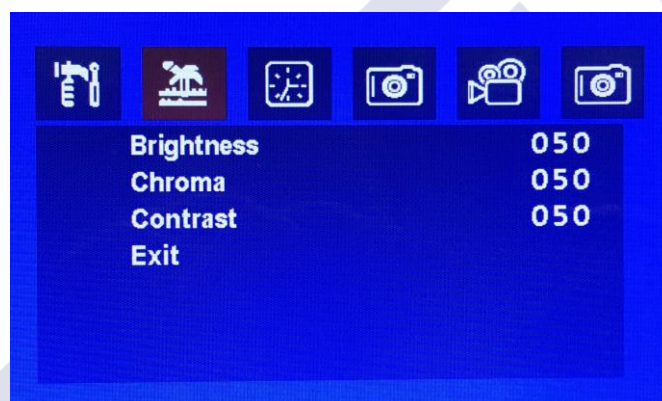


图 2/Picture 2

5.3.6. 日期和时间设置菜单(图 3)/ Date and time setting (Picture 3)

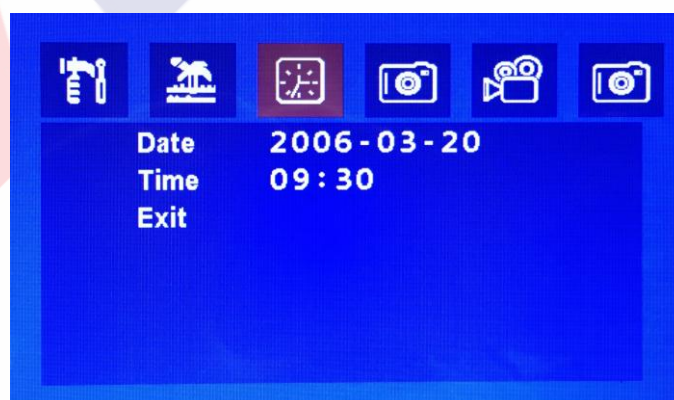


图 1/Picture 1

5.3.6.1. 第一项是日期:格式是年、月、日（如 2014-01-16）。通过按键 SW2 来选择年、月、日三者中的其中一个。按键 SW6 和 SW5 分别是数值加和减。当设置好后，按键 SW2 切换到未选状态，按键 SW5 切换到下一选项。

First is Date: example Year-Month-Date (eg:2014-01-16)。Press SW2 to choose each of them.Press SW6 and SW5 to “+” or “-”。After setting is ok, press SW2 Switch to no selected state, then press SW5 switch to next items。

5.3.6.2. 第二项是时间:格式是小时、分钟。通过按 SW2 来选择小时和分钟两者的其中一个。按键 SW6 和 SW5 分别是数值加和减。当设置好后，按键 SW5 切换到下一选项。

Second item is time:format is Hour and minute。Press SW2 to choose each of them.Press SW6 and SW5 to “+” or “-”。After setting ok, press SW5 switch to next item。

5.3.6.3. 第三项是退出，当选择“退出”时，按键 SW2 退出当前菜单，或通过 SW3 退出。

Third is exit, when choose “Exit”, press SW2 to exit current manue;or press SW3 to exit.

5.3.7. 拍照菜单(如图 4)/ Take picture menu(Picture4)

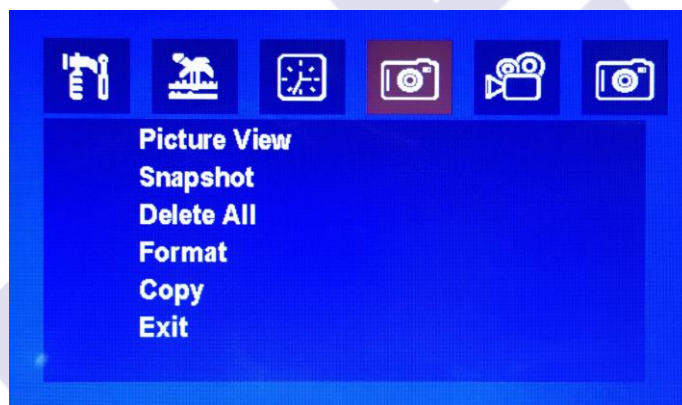


图 4/Picture 4

当切换到此菜单时，需按 SW6 或 SW5 进行向上或向下的选择操作，才能对选项进行调节。

When switch to this menu, press SW6 or SW5 to switch up and down, then adjust the options.

5.3.7.1. 查看选项: 按键 SW2 进入照片浏览。在照片浏览过程中，按键 SW6 浏览下一张照片，按键 SW5 浏览上一张照片，按键 SW2 删除当前这张照片，按键 SW3 退出照片浏览。

Picture View: press SW2 entry picture browse。Press SW6 browse next picture, press SW5 browse the last picture, press SW2 to delete the current picture press SW3 to exit picture browse。

5.3.7.2. 拍照选项:按键 SW2 进行拍照, 照片的格式是 JPG, 照片同时存储在 flash 芯片和 SD 卡中。4M flash 芯片可以保存 58 张照片, flash 中存放满 58 张照片之后会重复覆盖。每次拍照 flash 中新照片自动备份到 TF 卡中, 2G 及以上的 TF (最大支持 32G)最多可以存放 515 张照片, 满 515 张照片之后不会重复覆盖, 不再存放新照片。用户格式化或者在电脑上删除照片后又可以接着使用。

Snapshot: press SW2 to take a photo, the picture format is JPG, the pictures are storage in Flash and SD card.4M flash chip can hold 58 photos, flash can be repeated after storing 58 photos. Each photo is saved in flash, The TF card (maximum support 32G) of 2G and above can hold up to 515 photos. After 515 photos, there will be no overlap and no new photos will be stored. You formatting or delete photos on your computer and then use them again.

5.3.7.3. 删除选项:按键 SW2 删除掉所有的照片。

Delete All:press SW2 to delete all pictures.

5.3.7.4. 格式化选项:按键 SW2 进入格式化界面, 按键 SW6 和 SW5 分别进行向下和上选择。按键 SW2 确认是/否格式化。如果选择格式化了, 那么 TF 卡中的数据会全丢失。 以下是提示用户是/否格式化界面。(如图 5)

Format:press SW2 entry format, press SW6 and SW5 to switch up or down options, press SW2 to confirm yes/no formatting.If choose formatting, All the data in the TF card is lost. The following is a prompting to prompt you whether formatting or not. (see picture 5)

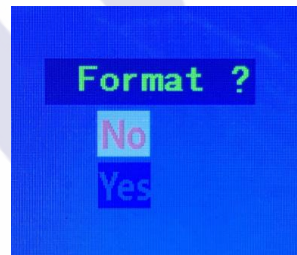


图 5/Picture 5

5.3.7.5. 备份选项:按键 SW2 把所有的照片备份到 TF 卡中, 照片可以在电脑上打开。

Copy:press SW2 to back up all the photos to the TF card, the photos can be opened on computer.

5.3.7.6. 当选择“退出”选项时, 按键 SW2 退出当前菜单, 或通过 SW3 退出。

When choose “Exit”,press SW2 to exit the current menu; or press SW3 to exit.

5.3.8. 录像菜单 (如图 6)/ Record video (Picture6)



图 6/Picture 6

当切换到此菜单时, 需按 SW4 或 SW5 确认, 才能对选项进行选择

When entry menu, if you want to choose options, you need to press SW6 or SW5 to switch up and down.

5.3.8.1. 录像选项: 按键 SW2 进行录像, 录像的格式是 AVI, 录像保存在 TF 卡中, 录像可以在电脑中打开播放。目前单段录像时间可以通过以下设置录制 10 秒、20 秒和 30 秒。在录像过程中, 按键 SW3 退出并保存录像。最大存储录像的段数计算方法为: (TF 卡的容量 - 512MB)/10MB。

Record: press SW2 to record video, format is AVI, and the video will be save in the TF card, Video can open on computer. At present, single video recording can record up to 10 seconds, 20 seconds, 30 seconds video, which can be set in the time below. During the video recording, you can press SW3 to exit the video and save it. The calculation method for the maximum storage video is: (TF card capacity - 512MB)/ 10MB, exceeding the capacity will be direct coverage.

5.3.8.2. 播放选项: 按键 SW2 进行播放 TF 卡中存储的录像, 在不按其他按键的情况下, 将顺序循环播放录像。按键 SW6 播放下一个录像, 按键 SW5 播放上一个录像, 按键 SW3 退出录像播放。

Play: press SW2 to play videos which save in the TF card, Video will be played sequentially if you do not press any keys. Press SW6 to play next video, press SW5 to play the last video, press SW3 to exit play video.

5.3.8.3. 按键 SW2 进入格式化界面，按键 SW6 和 SW5 进行向下和上下选择；按键 SW2 确认是/否格式化。如果选择格式化了，那么 TF 卡中的数据会全部丢失。下图是提示是/否格式化界面(如图 7)

Format: press SW2 entry format，press SW6 and SW5 to switch up and down options; press SW2 to confirm yes/no format. If choose formatting, then all the data in TF card will be lose. The following is a prompting to prompt you whether formatting or not. (see picture 7)

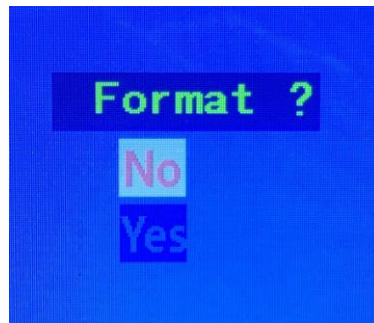


图 7/Picture 7

5.3.8.4. 时间: 按键 SW2 可以设置录像时长, 可以选择的设置的时长有 10 秒、20 秒和 30 秒。

Time: press SW2 can set the time of the video in the menu, and switch between 10 seconds, 20 seconds and 30 seconds.

5.3.8.5. 当选择“退出”选项时，按键 SW2 退出当前的菜单，或通过 SW3 退出。

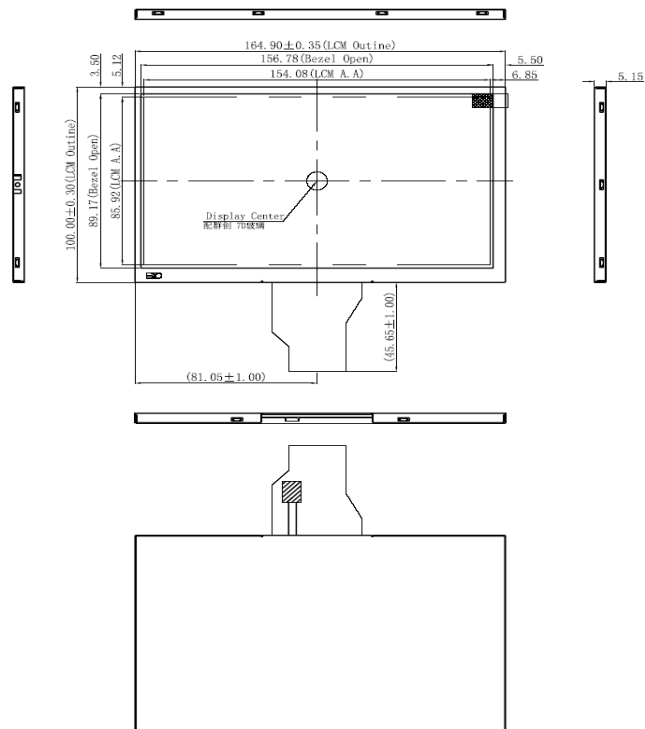
When choose “Exit”, press SW2 to exit the current menu; or press SW3 to exit.

6. 结构图/Structure:

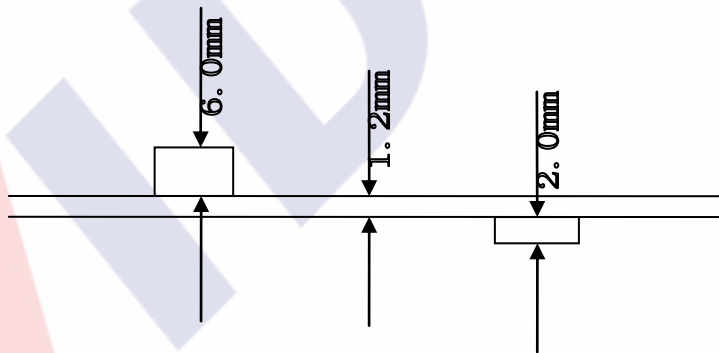
6.1. TFT LCD Panel:

Drawing Of LCM:
模组图:

未注公差: ± 0.30



1. Un-dimensioned tolerance is $\pm 0.3\text{mm}$
示注公差 $\pm 0.30\text{mm}$
2. "☆": Important dimension.
标有 ☆ 为重要尺寸
3. 外形测量需测试前、中、后3点。



7. 产品标示/Product Label:

AT070-DM057-18SG

8. 包装、运输及贮存/Packing Shipping

8.1. 供货包装/Packing

TBD

8.2. 运输及贮存/Shipping

运输过程避免碰撞和雨雪淋袭；严禁与化学物品及潮湿物品同库贮存。

Don't hit and rain when transportation: Don't storage with chemic goods and wet goods together.

9. JD78TAV 调试注意事项/Notes

- 9.1. TFT 出厂前已用专用仪器进行精密调试和老化、测试，一般不需要再做调整。

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

- 9.2. 调整前，应正确连接电源、视频信号，应数次开关电源以及视频信号检查图像情况。

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

- 9.3. 因为此产品为电子产品，请注意防静电。

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

- 9.4. 7" TFT- LCD PANEL 为玻璃制品，小心拿放，以免破裂。

7.0" TFT-LCD Panel is a glasswork, place carefully ,broken for fear.

- 9.5. 7" TFT- LCD 面板与驱动板之间通过“FPC”排线连接，请小心操作，以保证功能正常。

The connection is “FPC”, which connects 7.0" TFT-LCD panel with PCB, Please operates it carefully, in order to keep it well.

- 9.6. 按按键时需注意不能让手碰到按键引脚，因人体有一定的电阻，如触摸到会对按键功能造成影响。

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 判定标准/Judgment:

目的: 制定 PANEL 的标准供进料检查、制程检查、客户检查的依据.

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

范围: 适用于 7"TFT LCD 产品.

Ranges: apply to 7.0"TFT LCD modules

作业内容/Determinant standard and method:

10.1. 判定标准及方法:

Judgment standard and method:

10.1.1. LCD 显示屏伤痕检测方法判定:

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

在 20W 萤光灯下, 距离 PANEL 30CM 处垂直 (或左、右 45 度) 观察, 如果没有看见异物、伤痕, 则判定 OK, 否则 NG.

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

10.1.2. LCD 显示屏黑点, 白点, 色点检测方法与判定:

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

1. 检查方法/Inspection Method:

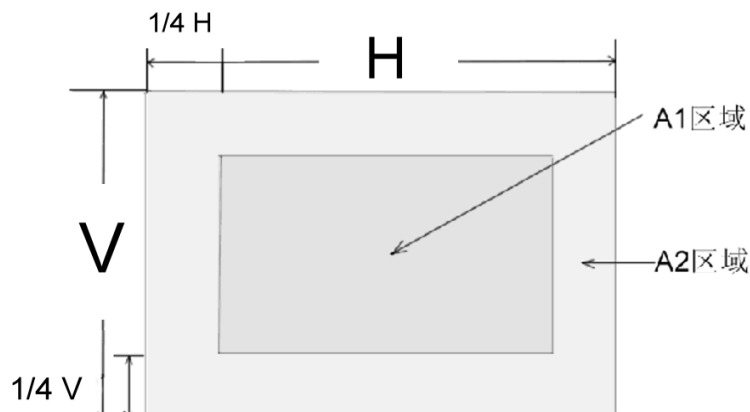
黑点: 在表示点灯状况下, 把检查黑点的 MASK 摆在 LCD 黑点的附近, 目视观察比较大小.

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.

白点, 色点: 在表示点灯状况下, 把检查黑点的 MASK 重叠在 LCD 白点 (色点) 处, 目视观察判断白点 (色点) 是否可以隐藏.

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.

2. 显示屏区域划分/Division of LCD Panel:



注/Note: A1 区域: 图像有效区域中心范围.

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

A2 区域: 图像有效区域边缘范围 (四周的区域)

A2 Area: The edge of the available area for the picture

10.1.3 判定选择/ Determinant Choice:

欠点直径 (mm) Spot Diameter		允收范围/Accept Range	
		A1 区域/A1 area	A2 区域/A2 area
黑点 Black spot	$d \leq 0.15$	不计/Disregard	不计/Disregard
	$0.15 < d \leq 0.3$	4	4
	$0.3 < d \leq 0.5$	2	3
	$0.5 < d < 0.8$	0	1
白点或色点 White spot or Color spot	$d \leq 0.15$	不计/Disregard	不计/Disregard
	$0.15 < d \leq 0.25$	3	3
	$0.25 < d \leq 0.3$	1	2
	$0.5 < d < 0.8$	0	1

注/Note:

1. 大小: 平均直径= (最长直径+最小直径) /2

Size: Average Diameter= (Max. Diameter + Min. Diameter) /2

2. 关于小欠点密集的时候, 用上述的基准判断。

Using information above as a standard in order to judge while the e spots are dense.

3. 黑斑、白斑: 通过电压的变化来看, 用对比的方法, 对于明显斑点用点规格判断。

Black & White spot: To judge the obvious spots through the change of voltage by comparison.

4. 总的黑点、白点、色点个数: A1+A2 区≤4 个。

Total quantity of Black & white & color spot: A1+A2≤4.