LC-GD56VGA-3

open frame monitor with VGA and Video input

5.6”, resolution 640xRGBx480

1. Profile

Display system with Video and VGA signal input.

- automatic identifying and converting of NTSC/PAL signals,
- built –in OSD (on-screen display) offers adjustment of brightness, contrast and color
- 5.6” high contrast TFT display with LED backlight

2. Application

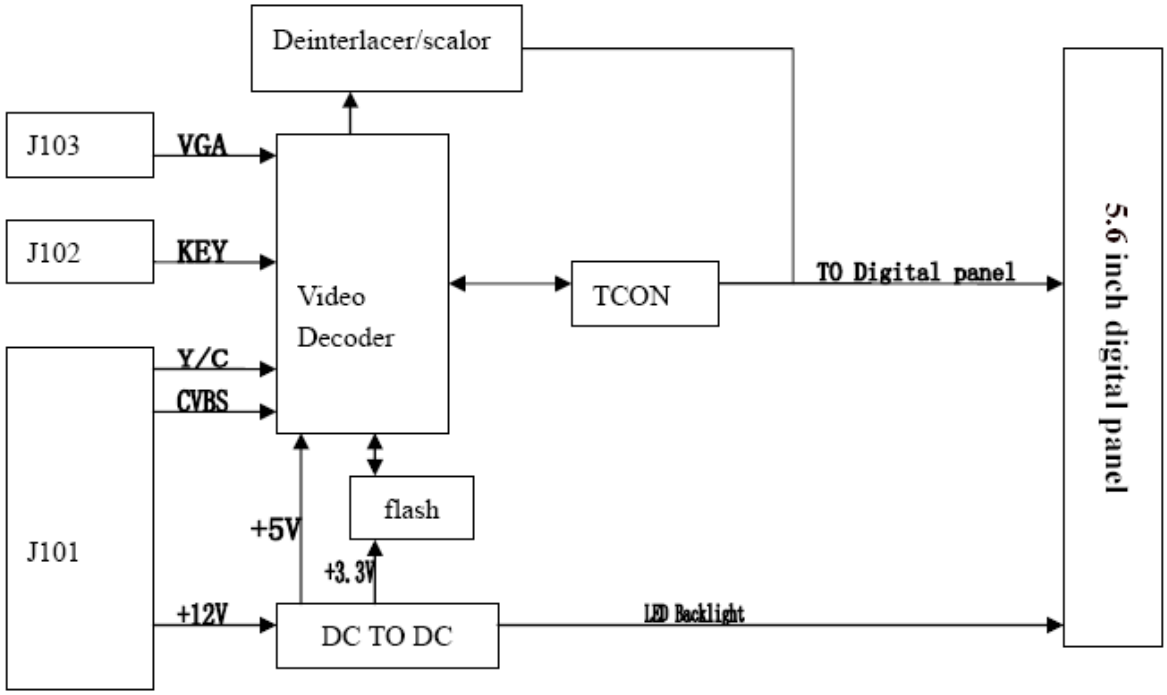
This module applies to

- Office electronic equipment
- Instrument and measure appliance
- Machinery and equipment
- Audiovisual (Car Monitor, Portable DVD Player, Long-distance terminal display)
- Household (Video door phone, Video phone)

3. Main Parameters:

- 5.6” TFT Display
- Resolution: 640(H) x RGB x 480(V)
- View angle (U/D/L/R) : (50/70/70/70)
- Luminance: ˜ 200 cd/m²
- Backlight: LED
- System: PAL/NTSC (automatic identifying and converting)
- Signal Input: Video, VGA
- Power Supply Voltage: DC+12V(9-15V) (+12V < 250mA)
- Active Area(mm): 112.896 (W) x 84.672 (H)
- Outside dimension of Display (mm): 126.5 (W) x 100 (H) x 5.7 (D)
- Structural dimension of PCB (mm): 102.0 (W) x 50.0 (H) x 7.9 (D)
- Operation temperature: -20°C ~+ 70°C
- Storage temperature: -20 °C~+80 °C
- Environment relative Humidity: 5~95 % RH

4. Block Diagram:

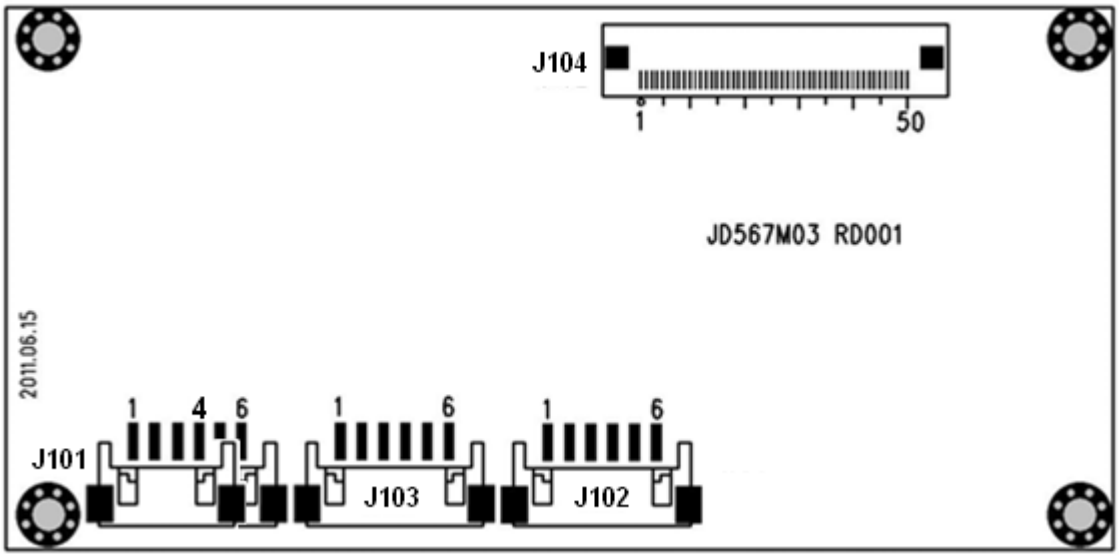


supported graphic resolutions in VGA-mode

VGA
640 x 480 -- 60 Hz
640 x 480 -- 72 Hz
640 x 480 -- 75 Hz
SVGA
800 x 600 -- 56 Hz
800 x 600 -- 60 Hz
800 x 600 -- 72 Hz
800 x 600 -- 75 Hz
XGA
1024 x 768 -- 60 Hz

※ Recommended to use VGA (640x480) resolution.

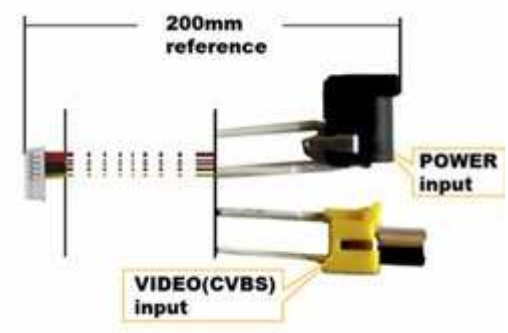
5. Wiring Diagram



6. Connection Definition of Driver Board:

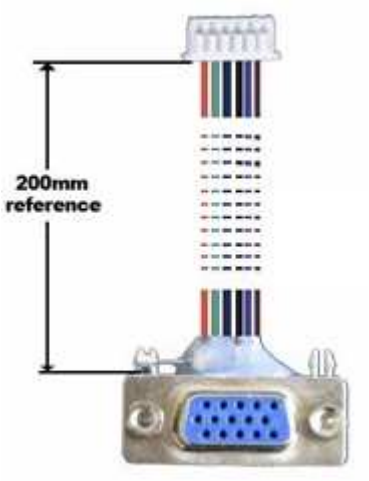
6.1 J101 (Video input, power supply)

Pin No.	Symbol	Input/Output	Description	Remark
1	+12V	I	+12V power input	
2	GND	P	Ground	
3	GND	P	Ground	
4	Video	I	Video signal input	
5	~~Y IN~~	~~I~~	~~Brightness signal input~~	
6	~~C IN~~	~~I~~	~~Color signal input~~	



6.2 J103 (VGA-input)

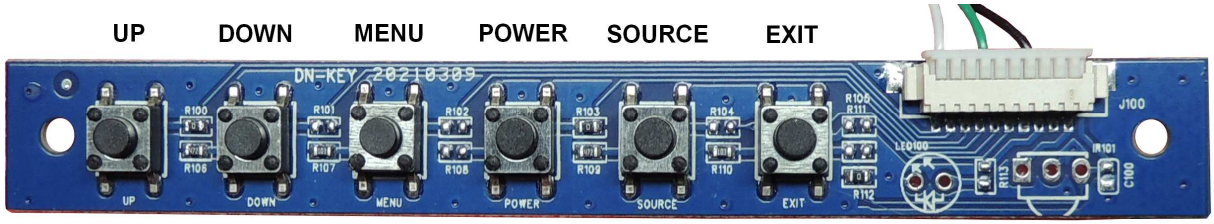
Pin No.	Symbol	Input/Output	Description	Remark
1	R+	I	VGA - Red	
2	G+	I	VGA - Green	
3	B+	I	VGA - Blue	
4	GND	P	Ground	
5	HS-IN	I	VGA - horizontal sync	
6	VS-IN	I	VGA - vertical sync	



6.3 J102 (Control)

Pin No.	Symbol	Input/Output	Description	Remark
1	VCC	O	Power supply IR	
2	SAR0	I	Key-press input	
3	GND	P	Ground	
4	VCC	I	Power supply	
5	SAR1	I	Key-press input	
6	GND	P	Ground	

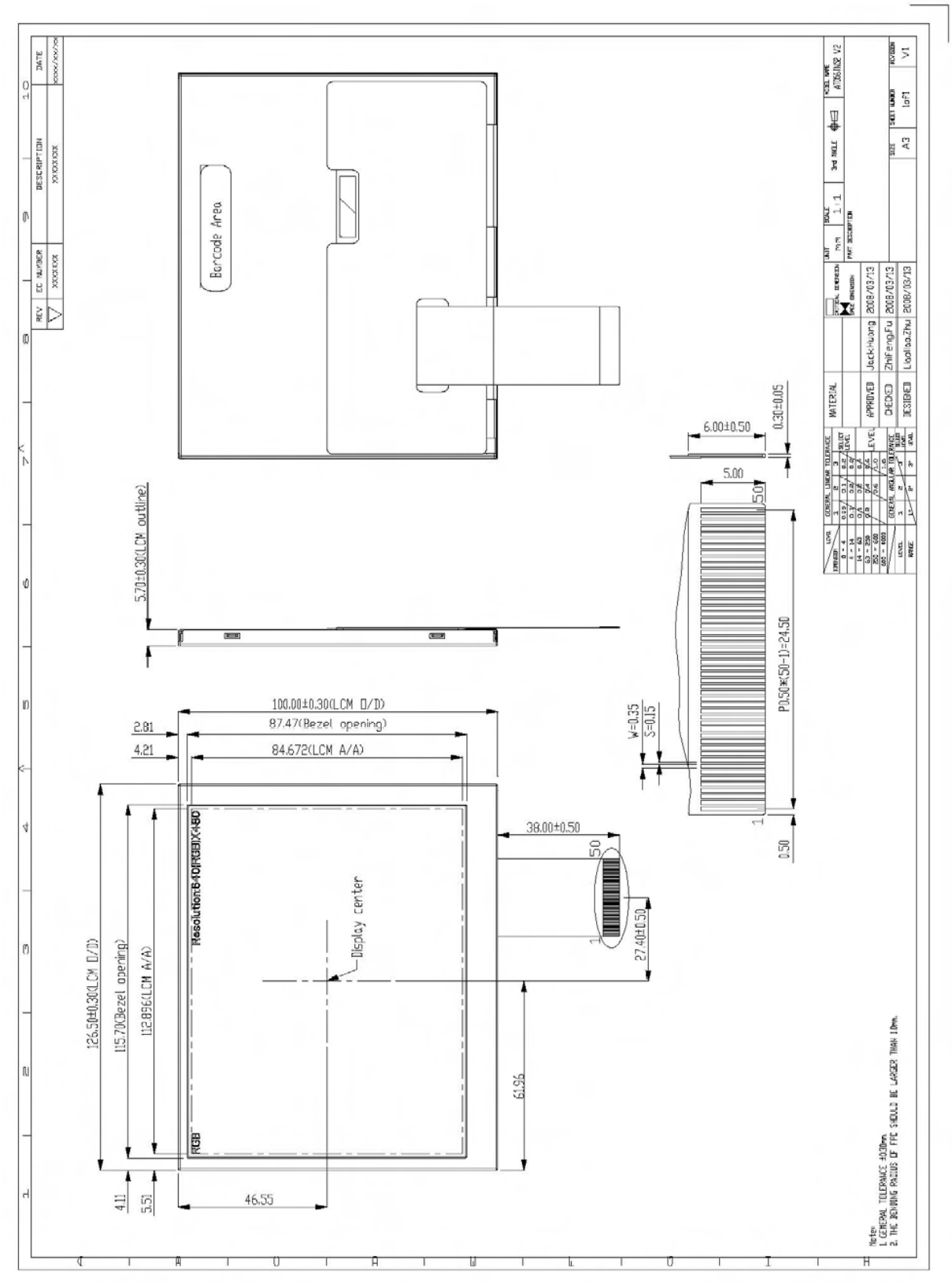
OSD key board connected to J102



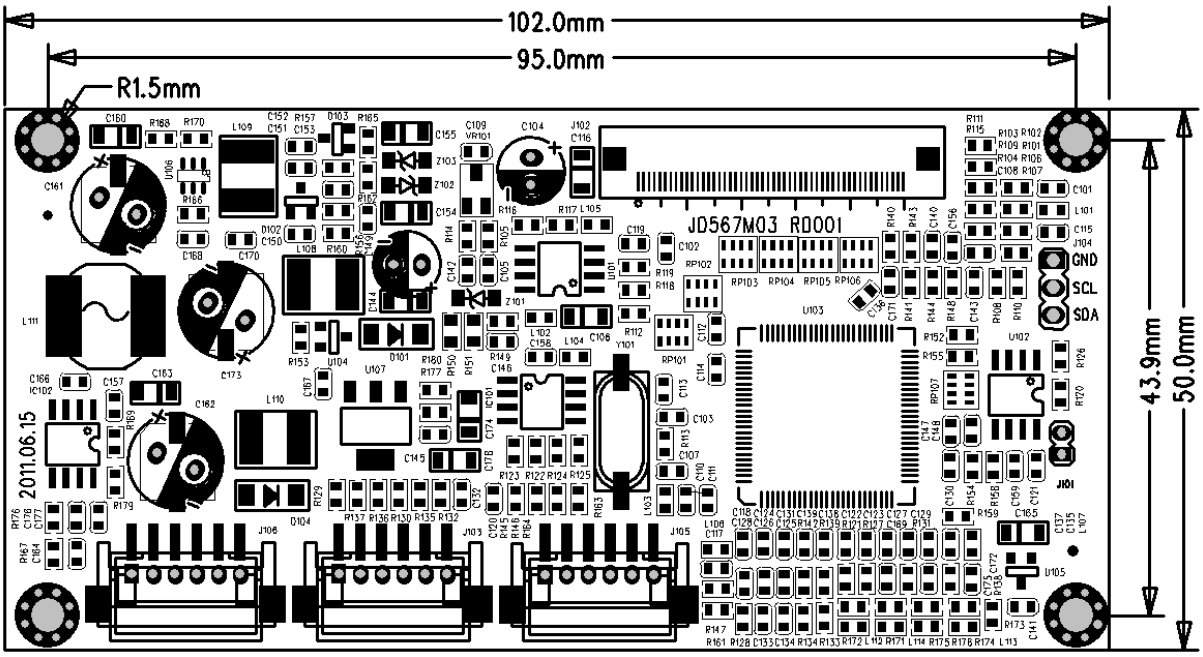
Pin No.	Symbol	Input/Output	Definition	Remark
1				
2				
3				
4	GND			
5				
6				
7	SAR1			
8				
9				
10	SAR0			

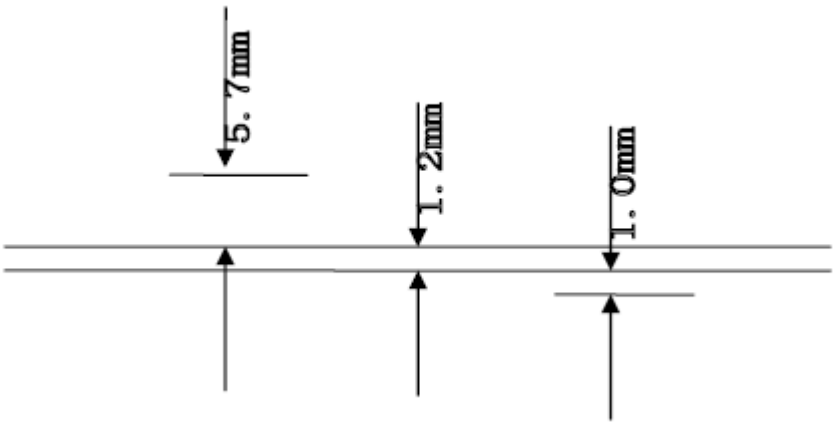
7. Structural Diagram:

7.1 LCD Panel:



7.2 Structural Diagram of PCB:





8. TFT LCD Panel inspection standard

8.1 Determinant standard and method:

8.1.1 The method and determinant of LCD panel:

8.1.1.1. Inspect vertically (or at 45° angle from left/right) under the Light tube (the power is 40 W) in the distance of 30cm to the panel. If there is no nick, it determines “OK”, otherwise “NG”.

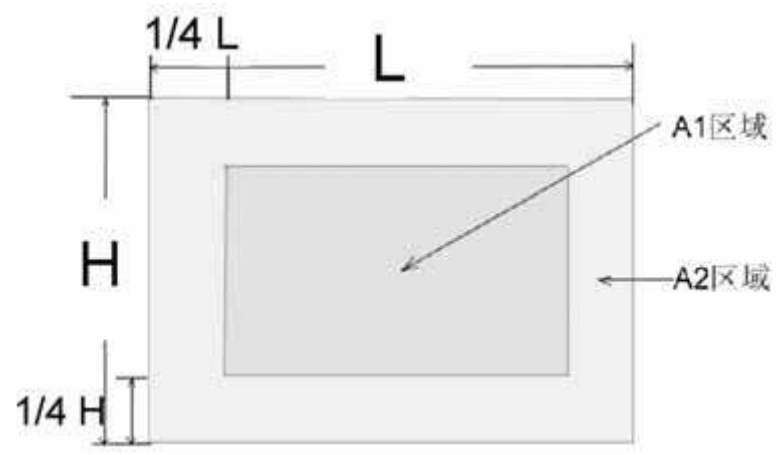
8.1.2 The method and determinative for black & white & color spots for the LCD panel:

8.1.2.1 Inspecting methods

8.1.2.1.1. 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.

8.1.2.1.2 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.

8.1.2.2. 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
(8 mm around the central area)

8.1.3 Determinate Choice

Spot Diameter (mm)		Allowed Area	
		A1	A2
Black Spot	d≤0,15	neglected	neglected
	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	neglected	neglected
	0,15<d≤0,3	3	3
	0,3<d≤0,5	1	2
	0,5<d≤0,8	0	1

Remark:

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

9. Attention:

1. The unit is sensitive to electrical discharge, so you need to take anti-static measure when handling the unit.
2. The display is made of glass. Don't drop the unit and take care not to put pressure on the display while fixing.
3. The interconnection between display and controller board is a FPC (flexible printed circuit board). Don´t bend it in a smaller radius that 5 mm and don't pull it.
4. The controller board is a printed circuit board with fine pitch components. Don't bend the board or put pressure on it while fixing.
5. The display housing is made of metal. Don´t let the controller board get in touch with the display housing, when powered up. That can cause a short circuit which can damage the parts.
6. Connect all parts in the right way before supplying power.
7. Voltage may not exceed upper limit.
8. Don´t supply reverse voltage. The unit can be damaged heavily.
9. Some parts can produce high voltage to supply the backlight. Please don´t touch the board in order to keep your skin safe.
10. Don´t touch the display while adjusting color and brightness. That may result in a wrong setting.

11. Revision:

V2.0	02/01/2010	new controller board
V2.1	15/11/2013	revised
V3	23/01/2023	revised, new OSD key board