

# LC-GD50VGA

## open frame monitor with VGA and Video input

5.0", resolution 640xRGBx480

### 1. Profile:

GD50MLXD Ver:1.00 5.0" color TFT lcd module is composed of JD50MLXD Ver:1.00 driver board and 5.0" digital display:GTI050TN22 V.1. This module provides users with Video, CVBS, and VGA signal input and automatic identifying and converting of NTSC/PAL systems, built-in OSD (on-screen display) function, and the OSD menu offers adjustment of brightness, contrast and color.

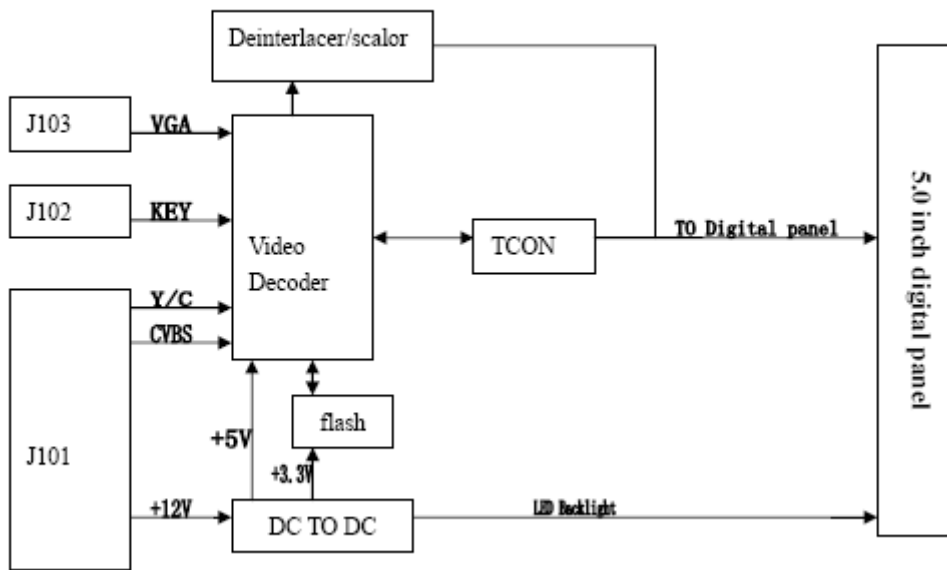
### 2. Application:

- Office electronic equipment
- Apparatus & measurement appliance
- Machinery
- Audiovisual (Display for car、Portable DVD、Long-distance terminal、Lcd TV)
- Home appliance (Video door phone、Video telephone)

### 3.Main Parameter:

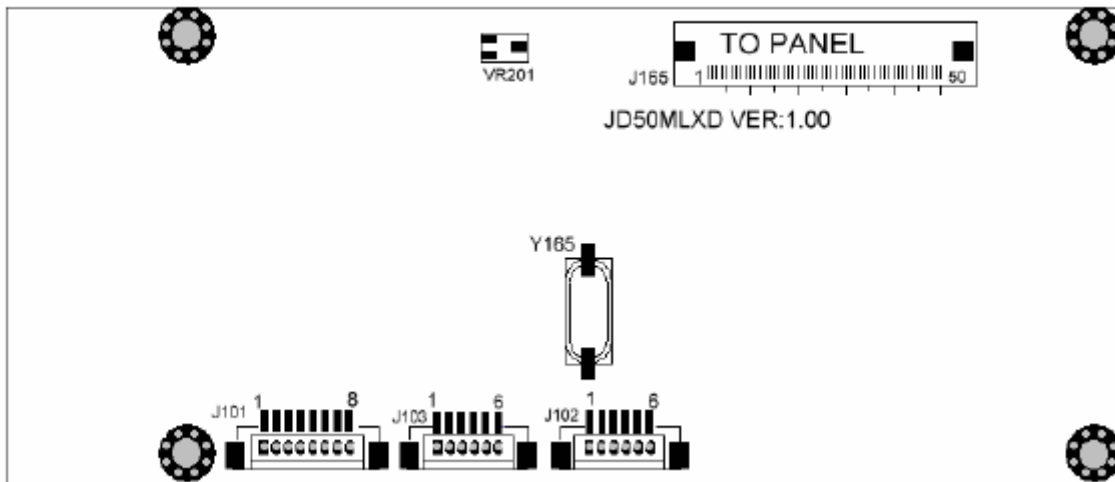
- Product Name: 5.0" TFT-LCD module
- Product Model: GD50MLXD
- TFT display: 5.0" TFT-LCD display: GTI050TN22
- Backlight: LED
- Resolution: 640×RGB×480
- Luminance: 200 cd/m<sup>2</sup> ( take FPC line down, only light t backlight to test)
- View angle (U/D/L/R): (50/70/70/70)
- Power supply voltage: DC9~15V (Type12V 280mA±20mA )
- Active Area(mm): 101.568 (H) × 76.176 (V)
- Outside dimension of display(mm): 117.65(W)×88.43 (H) ×5.7(D)
- Structural dimension of PCB(mm): 117.1(W)×49.9 (H) ×6.7(D)
- Operation temperature: -20~70℃
- Relative humidity: 5~95% RH
- Storage temperature: -30℃~+80℃

#### 4. Block Diagram:



supports graphic resolutions of 640x480, 800x600 and 1024x768 in VGA-mode

#### 5. Wiring Diagram :



## 5.1 OSD-Keybaord, connected to J102



Pin No.	Symbol	Input/Output	Definition	Remark
SW4	SOURCE	I	AV Switch	
SW5	POWER	I		
SW6	MENU	I		
SW7	+	I	Up	
SW8	-	I	Down	

## 6. Connection Definition of Driver Board :

### 6.1J103:

Pin No.	Symbol	I/O	Description	Remarks
1	R+	I	VGA-R	
2	G+	I	VGA-G	
3	B+	I	VGA-B	
4	GND	-	Ground	
5	VS-IN	I	VGA-VS	
6	HS-IN	I	VGA-HS	

### 6.2 J101:

Pin No.	Symbol	Description	Remarks
1	+12V	+12Vpower input	
2	+12V	+12Vpower input	
3	GND	Ground	
4	GND	Ground	
5	CVBS	Video signal input	
6	YIN	Y signal input	
7	CIN	C signal input	
8	GND	Ground	

### 6.3 J102

Pin No.	Symbol	Description	Remarks
1	+5V	+5V output	
2	IR	Remote control receiver signal	
3	GND	Ground	
4	SAR0	Key-press input	
5	SAR1	Key-press input	
6	SAR2	Key-press input	

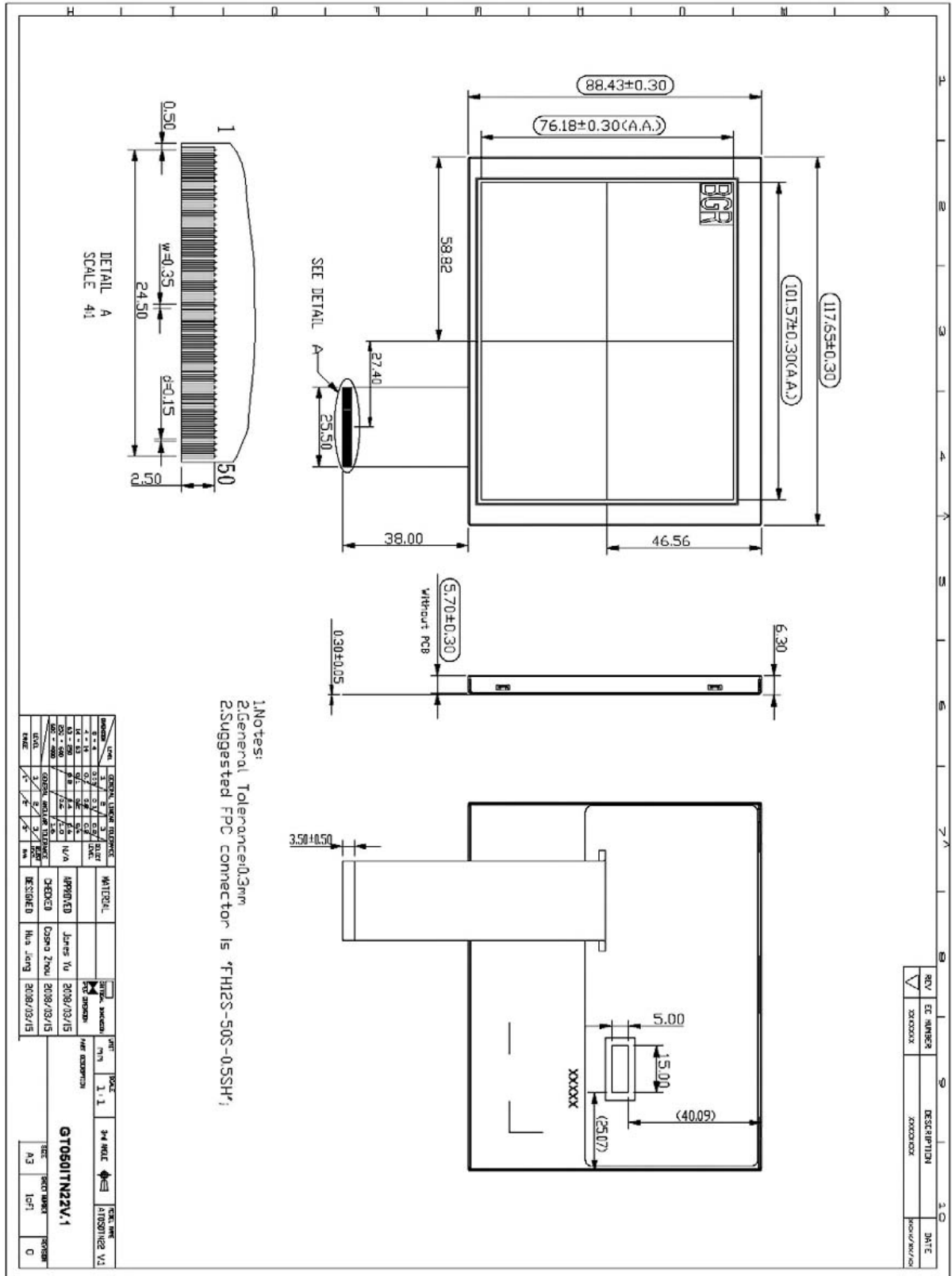
## 6.4 J165

Pin No.	Symbol	I/O	Function	Remark
1	VLED+	P	Power for LED	
2	VLED+	P	Power for LED	
3	VLED-	P	Power for LED	
4	VLED-	P	Power for LED	
5	GND	P	Power ground	
6	VCOM	I	VCOM input	
7	VCC	P	Digital power supply(+3.3V)	
8	MODE	I	DE or HV mode control	Note1
9	DE	I	Data Enable	
10	VS	I	Vsync signal input	
11	HS	I	Hsync signal input	
12	B7	I	Blue data input (MSB)	
13	B6	I	Blue data input	
14	B5	I	Blue data input	
16	B3	I	Blue data input	
17	B2	I	Blue data input	
18	B1	I	Blue data input	
19	B0	I	Blue data input(LSB)	
20	G7	I	Green data input(MSB)	
21	G6	I	Green data input	
22	G5	I	Green data input	
23	G4	I	Green data input	
24	G3	I	Green data input	
25	G2	I	Green data input	
26	G1	I	Green data input	
27	G0	I	Green data input(LSB)	
28	R7	I	Red data input(MSB)	
29	R6	I	Red data input	
30	R5	I	Red data input	
31	R4	I	Red data input	
32	R3	I	Red data input	
33	R2	I	Red data input	
34	R1	I	Red data input	
35	R0	I	Red data input(LSB)	
36	GND	P	Power ground	
37	DCLK	I	Sample clock	
38	GND	P	Power ground	
39	L/R	I	Select left to right scanning direction	Note2
40	U/D	I	Select up or down scanning direction	Note2
41	VGH	I	Positive power for scan driver	
42	VGL	I	Negative power for scan driver	

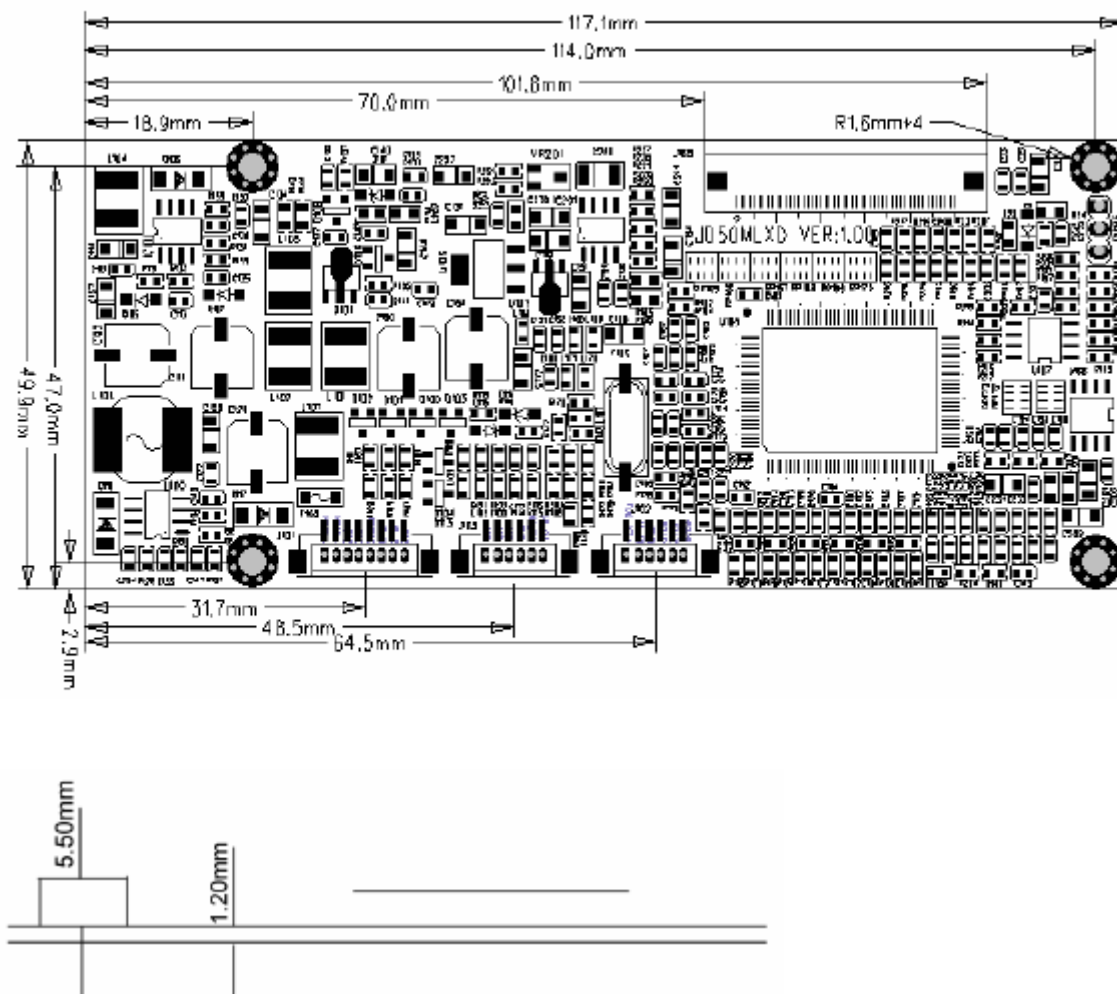
43	AVDD	P	Analog power supply(+5V)	
44	RESET	I	Reset	
45	POL	O	Polarity select for the line inversion control signal	
46	VCOM	I	VCOM input	
47	NC	-	No connect	
48	NC	-	No connect	
49	NC	-	No connect	
50	NC	-	No connect	

## 7. Structural diagram:

### 7.1. LCD Panel



## 7.2 Structural Diagram of PCB:





## 8. TFT-LCD Panel's Determinat standard

Aim: Establishing the standard of PANLE for inspecting material & progress and for clients' inspection.

Content:

### 8.1 Determinant standard and method:

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

8.1.1.1. 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".

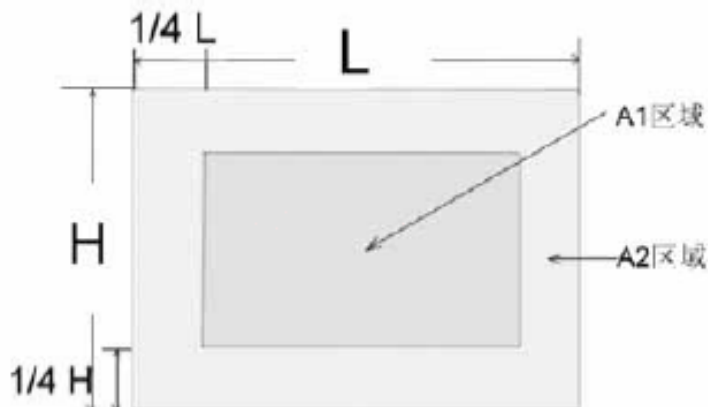
8.1.2. The method and determinative for black & white & color spots for the Panel of LCD :

8.1.2.1. Inspecting method

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.

#### 8.1.2.1.2. 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  
( 8mm around the central area )

### 8.1.3 Determinant Choise

Spot Diameter (mm)		Allowed Area	
		A1	A2
Black Spot	$d \leq 0.15$	Irrespective	Irrespective
	$0.15 < d \leq 0.3$	4	4
	$0.3 < d \leq 0.5$	2	3
	$0.5 < d \leq 0.8$	0	2
White or color spot	$d \leq 0.15$	Irrespective	Irrespective
	$0.15 < d \leq 0.3$	3	3
	$0.3 < d \leq 0.5$	1	2
	$0.5 < d \leq 0.8$	0	1

- Remark: 1. Size: Average Diameter= (Max. Diameter + Min. Diameter) /2  
 2. Using information above as a standard in order to judge 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:  $A1+A2 \leq 4$ .

## 9. Packing

TBD

## **10. Attention:**

1. The voltage of supply power don't exceed maximum limit.
2. The connector can't connect board in reverse, or the board will be burnt and the products can't function well.
3. Please don't touch it in order to keep your skin non-burn when you electrify the board(there is high voltage on the board).
4. It is a electronic product, so you need to take anti-static measure when you operate it.
5. 5.0" TFT-LCD panel is a glasswork, place carefully ,broken for fear.
6. The connection is "FPC", which connect 5.0" TFT-LCD panel with PCB, Please operate it carefully in order to keep it well.
7. Don't touch the pin of "variable resistor" when you adjust "VR".