

# VIDEOLOGY

IMAGING SOLUTIONS INC.  
Original Equipment Manufacturer

## Instruction Manual 45S040R 4" TFT LCD Video Module



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**For technical assistance with this product, please contact the supplier from whom the product was purchased.**

**Videology Imaging Solutions, Inc. USA**  
37M Lark Industrial Parkway  
Greenville, RI 02828  
Tel: 401-949-5332  
Fax: 401-949-5276  
[www.videologyinc.com](http://www.videologyinc.com)



**Videology Imaging Solutions, B.V. Europe**  
Neutronenlaan 4  
NL-5405 NH Uden, Netherlands  
Tel: +31 (0) 413-256261  
Fax: +31 (0) 413-251712  
[www.videology.nl](http://www.videology.nl)

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## 1. Document History

Revision	Issue Date	Reason	CN#
Rev A	11-05-09	Initial release	10-0004
Rev B	06-30-10	Updated all sections for 45S040R	

## 2. Scope of Work

This specification shall be applied to model: 45S040R, 4" color TFT LCD module.

## 3. Specifications

<i>Electrical</i>	<b>45S040R</b>
Operating System	NTSC/ PAL auto switchable
Picture Size	4" diagonal
Resolution (H x V)	480 x 234 pixels
LCD Type	TFT active matrix, R.G.B. Delta
Color Configuration	R.G.B. Delta
Active Pixels (W x H)	82.11 x 61.77
Dot Pitch (W x H)	0.171mm x 0.264mm
Brightness	250 cd/m <sup>2</sup>
Contrast Ratio	150: 1
Response Time	Tr: 15ms Tf: 20ms
Backlight	LED
Mirror Mode	On/Off
Vertical Flip	On/Off
Input Signal	1Vp-p composite video at 75 Ohms
Video Angle	Left 45 <sup>0</sup> , Right 45 <sup>0</sup> , Up 30 <sup>0</sup> , Down 30 <sup>0</sup>
Lamp Life-time	10,000hr min.
Power Source	12VDC $\pm$ 10%
Power Consumption	3W (max)

### *Environmental*

Operation Temperature	0° C ~ 60° C (32° F ~ 140° F)
Storage Temperature	-25° C ~ 80° C (-13° F ~ 176° F)
Operating Humidity	Max. 95% RH
Storage Humidity	Max. 95% RH

### *Mechanical*

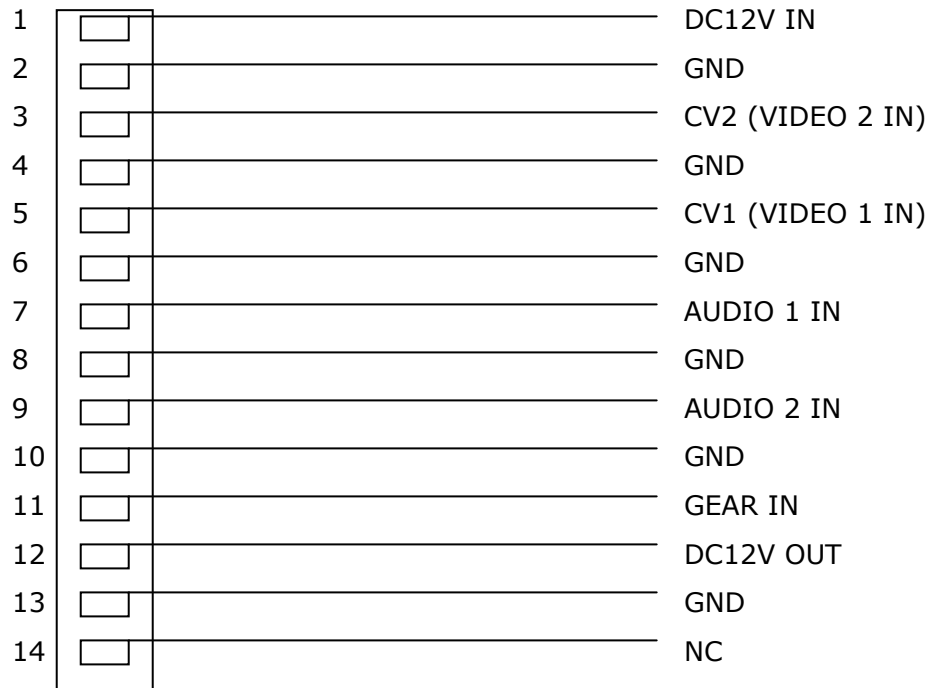
Dimensions	95.35mm x 77.48mm x 3.5mm
W x H x D (Panel)	(3.75" x 3.05" x 0.14") minimum LCD w/ driver board
Weight	155g (0.54 lb)
External Controls	Contrast, Brightness, Color, Hue (NTSC only), Saturation, Sharpness, Mirror, Vertical Flip, Volume
Safety Standards	FCC, CE, UL, RoHS

### *Accessories*

Included	Cables 2 AV-IN, 1 12VDC-IN
Optional	Keyboard control with LED light

## 4. Connectors

### 4.1. Pin assignment for J1



### 4.2. Pin assignment for J3



#### 4.3. Pin Assignment of FPC-30P (30 pin ribbon cable connector)

Pin No.	Symbol	I/O	Pin Description	Remark
1	GND		Ground for logic circuit	
2	VCC		Supply voltage of logic control circuit for scan driver	
3	VGL	I	Negative power for scan driver	
4	VGH	I	Positive power for scan driver	
5	STVR	I/O	Vertical start pulse	
6	STVL	I/O	Vertical start pulse	
7	CKV	I	Shift clock input for scan driver	
8	U/D	I	Up/down scan control input	
9	OEV	I	Output enable input for scan driver	
10	VCOM	I	Common electrode driving signal	
11	VCOM	I	Common electrode driving signal	
12	GLED1		LED module 1 Cathode	
13	VLED1		LED module 1 Anode	
14	VLED2		LED module 2 Anode	
15	GLED2		LED module 2 Cathode	
16	L/R	I	Left/right scan control input	
17	Q1H	I	Analog signal rotate input	
18	OEH	I	Output enable input for data driver	
19	STHL	I/O	Start pulse for horizontal scan line	
20	STHR	I/O	Start pulse for horizontal scan line	
21	CPH3	I	Sampling and shifting clock pulse for data driver	
22	CPH2	I	Sampling and shifting clock pulse for data driver	
23	CPH1	I	Sampling and shifting clock pulse for data driver	
24	DVDD		Supply voltage of logic control for data driver	
25	DVSS		Ground for logic circuit	
26	VA	I	Altered video signal input (Red)	
27	VB	I	Altered video signal input (Green)	
28	VC	I	Altered video signal input (Blue)	
29	AVDD		Supply voltage for analog circuit	
30	AVSS		Ground for logic circuit	

## 5. Inspection Standard

### 5.1. Inspection environment conditions

Room Temperature: 20° C ~ 25° C

Humidity: 65±5% RH

The viewing line should be perpendicular to the surface screen.

### 5.2. Classification of Defects

#### 5.2.1. Dot Defect

##### a) Inspection condition

Inspection distance: 35±5cm

Inspection illumination: 100~150Lux

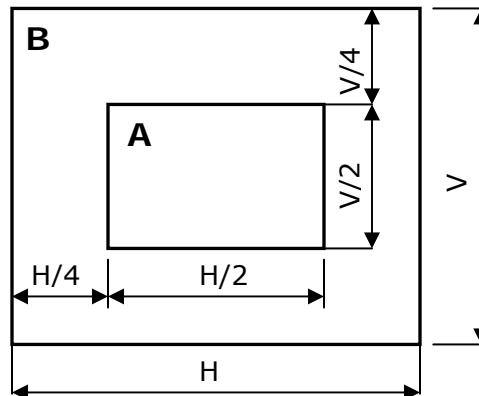
Panel temperature: 30±5° C

Inspection pattern: Full white, full black, red, green and blue screens.

##### b) Acceptable

Item	Area		Total
	A	B	
Blue Black	2	3	4
Red Green White	1	3	3
Total	2	5	7

##### c) The definitions of A and B zone



#### 5.2.2. Scratch on the Polarizer

Number = 3 max

Width  $\geq$  0.1 mm, Length  $\geq$  6 mm

#### 5.2.3. Dent on the Polarizer

Number = 3 max, Average Diameter  $\geq$  0.3 mm

#### 5.2.4. Foreign Material on the Polarizer

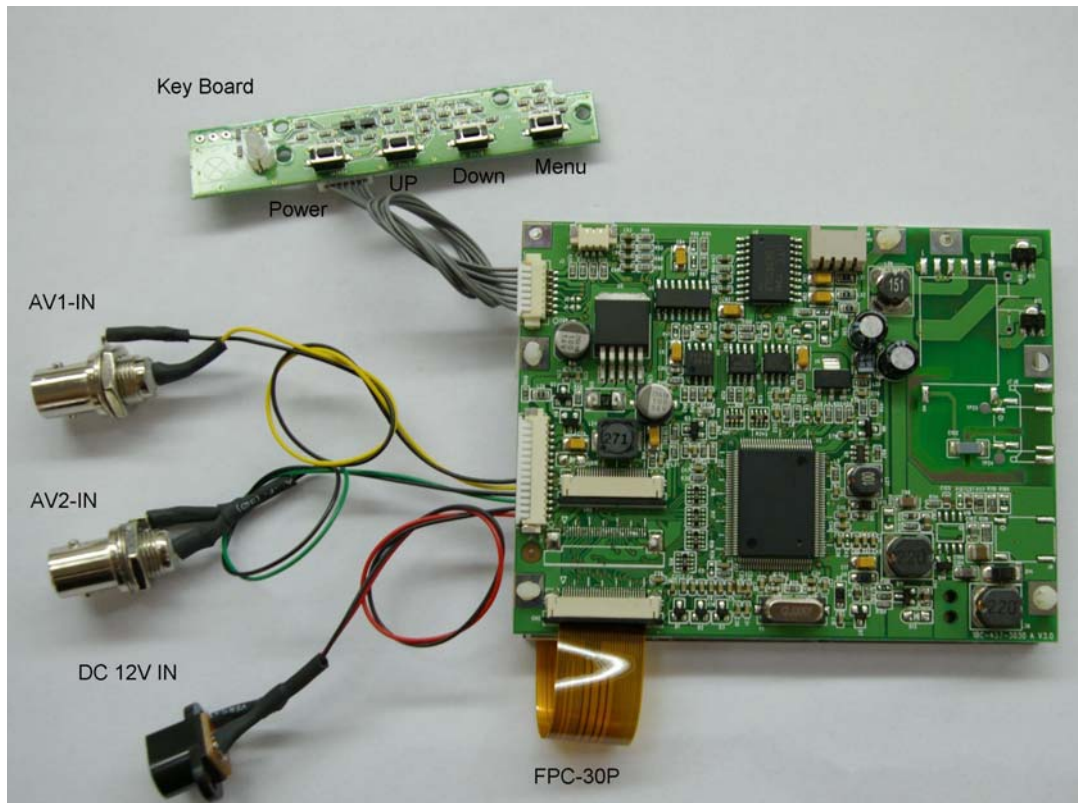
Number = 2 max, Average Diameter  $\geq$  0.5 mm

#### 5.2.5. Afterimage

After displaying a pattern for 5 seconds then switching to a different pattern, the previous pattern should disappear within 10 seconds.

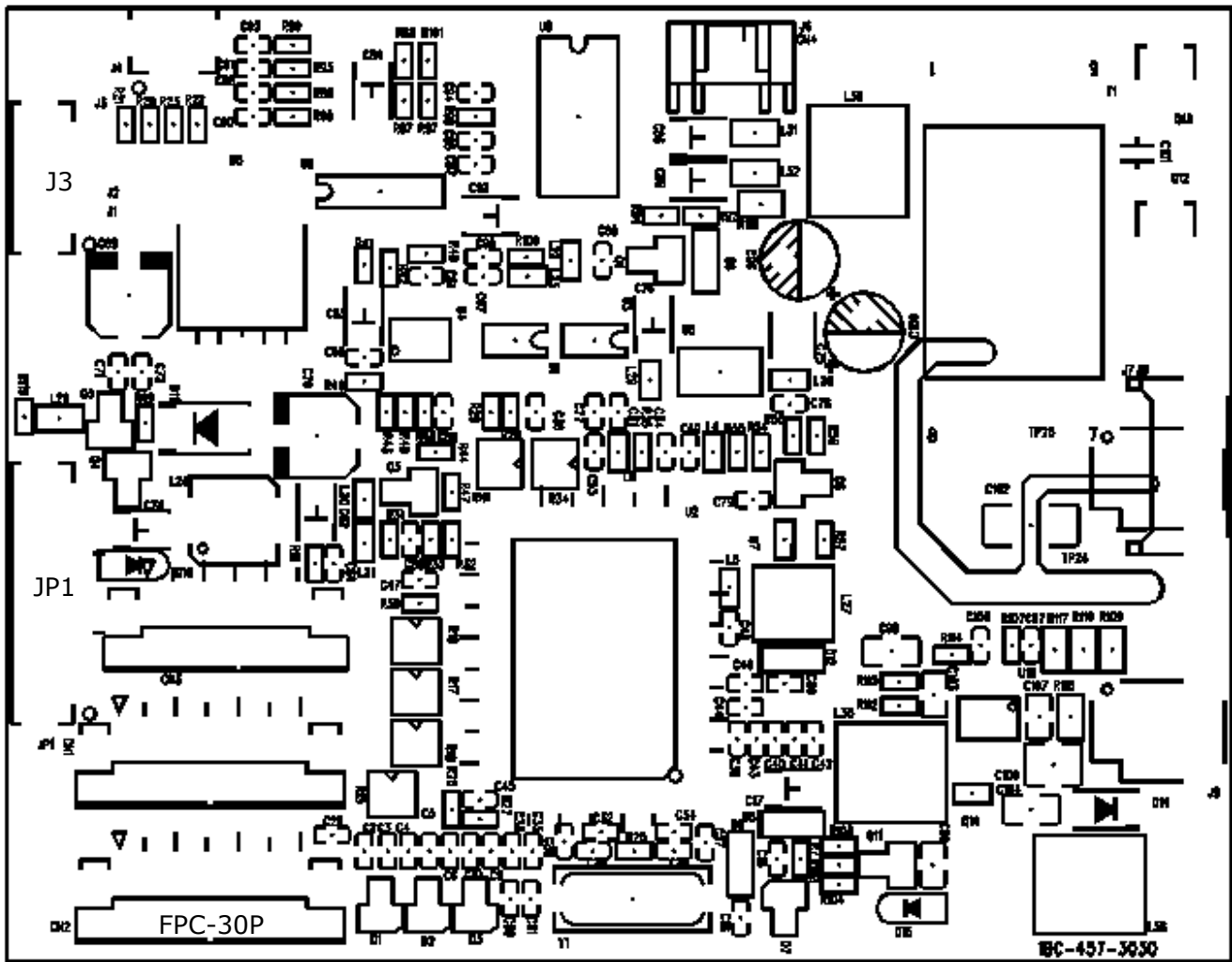
## 6. The Reference of Input Application

### 6.1. Keyboard Operation (Optional)

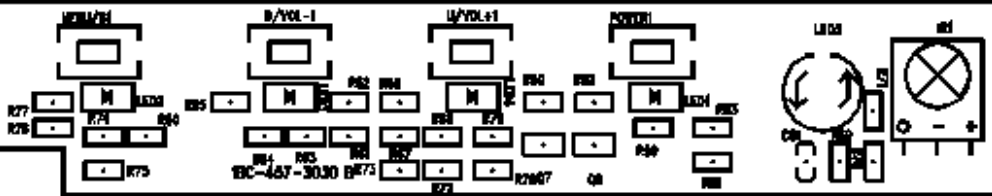


1. Press "POWER" to switch on the LCD monitor.
2. Press the Down/UP keys to select AV1 or AV2.
3. Press the "MENU" key to get into the OSD Operator (Contrast, Brightness, Hue (NTSC-only), Saturation, Sharpness, Mirror setting [Mirror/U/D]).
4. Press UP/DOWN keys to navigate and/or change settings.
5. Press the "POWER" key to turn off the LCD monitor.

## 7. Outlook of Driver Board



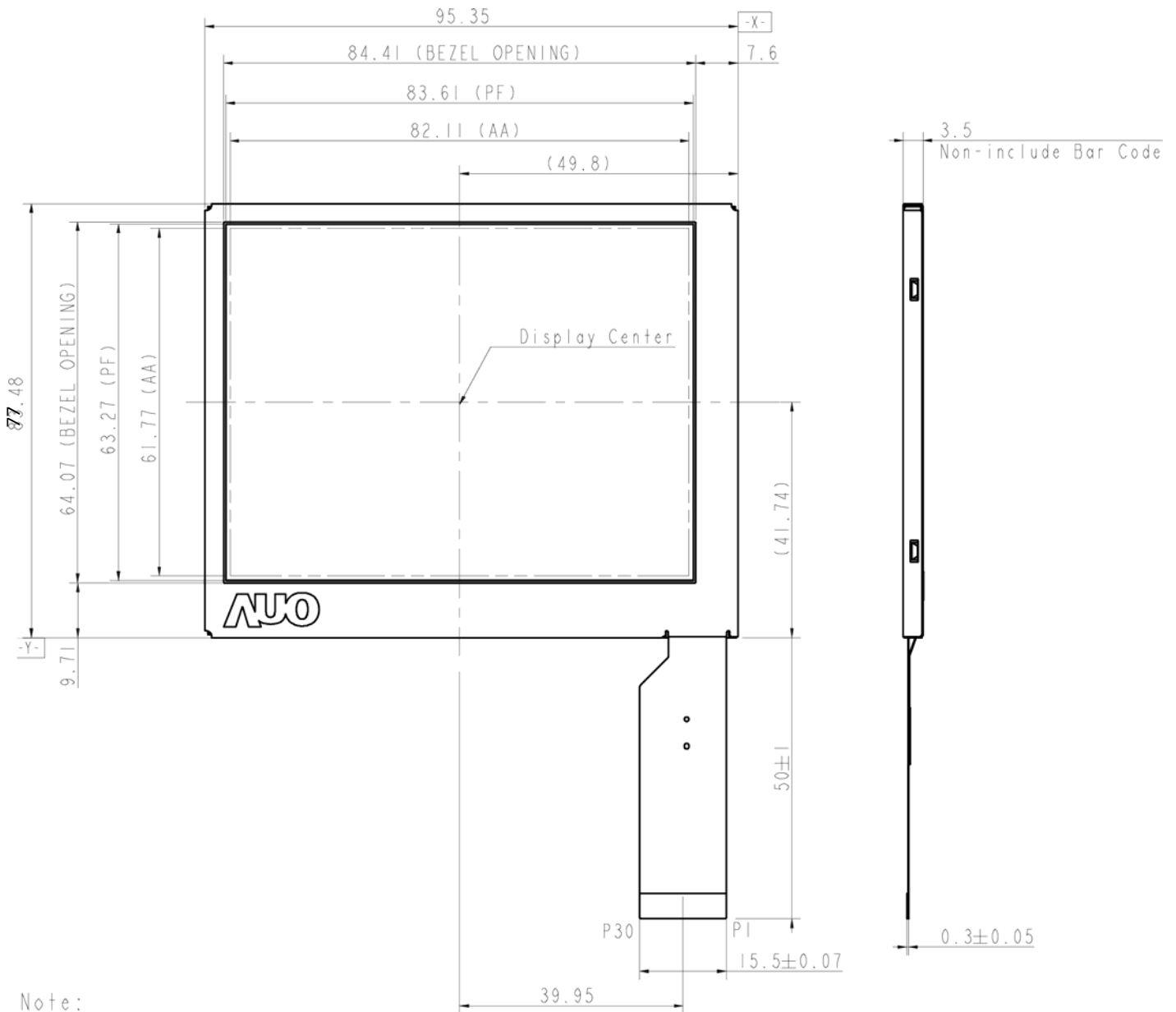
main board



keyboard (optional)

## 8. Mechanical Drawing

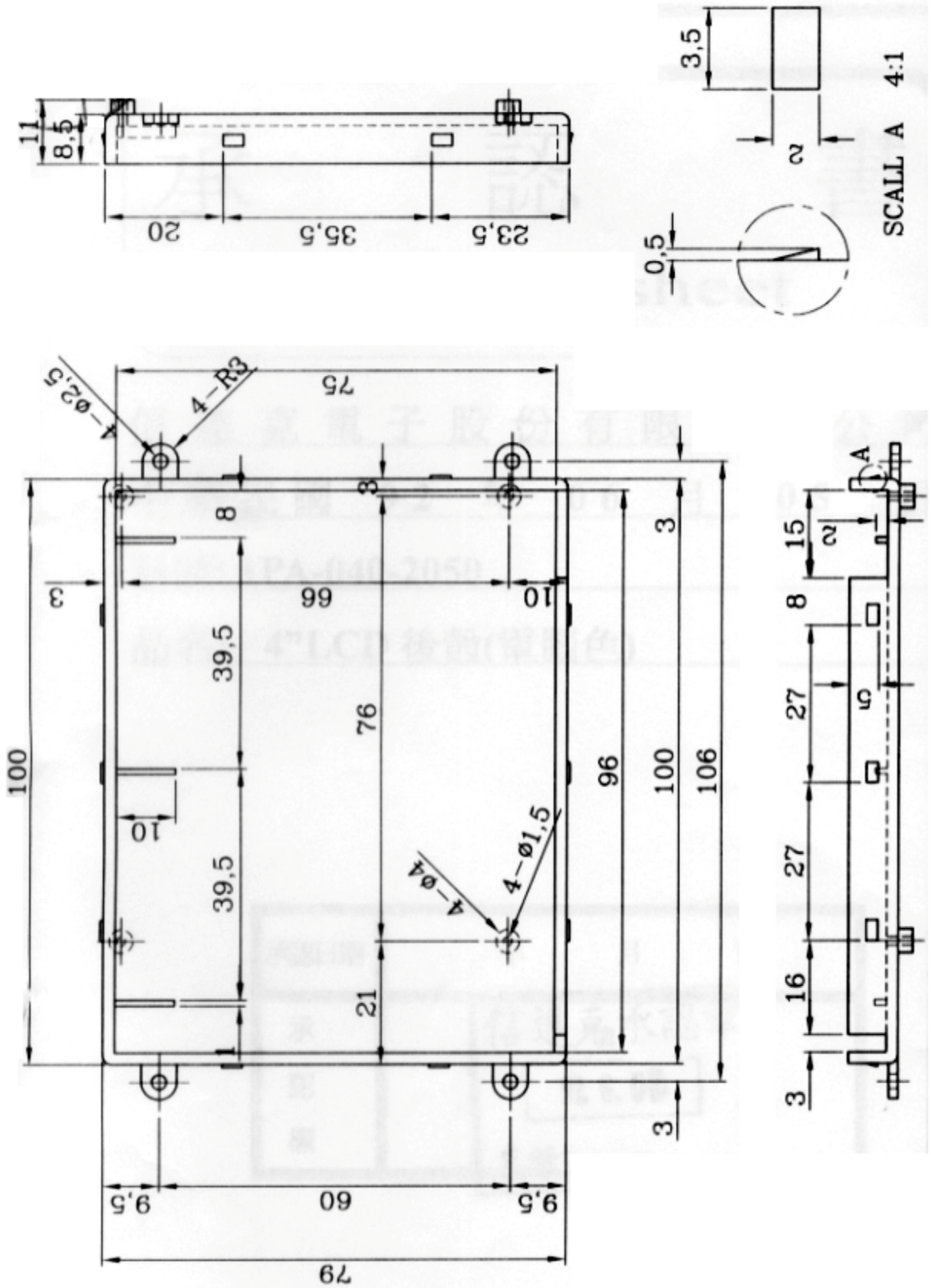
### 8.1. Panel Dimensions



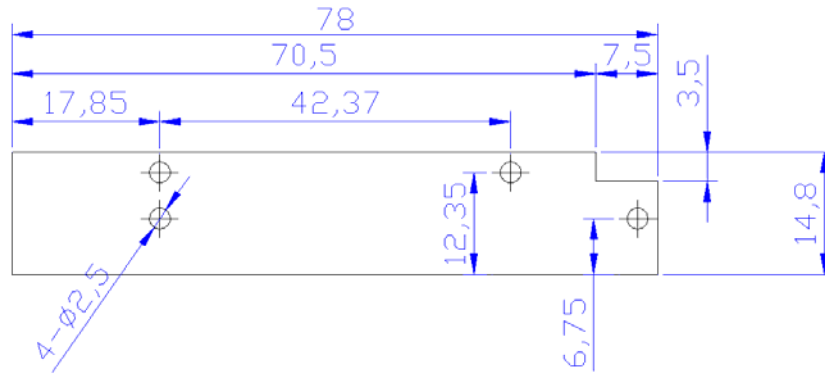
Note:

1. Unit: mm
2. General Tolerance: ±0.3
3. The bending radius of FPC should be bigger than 0.6mm

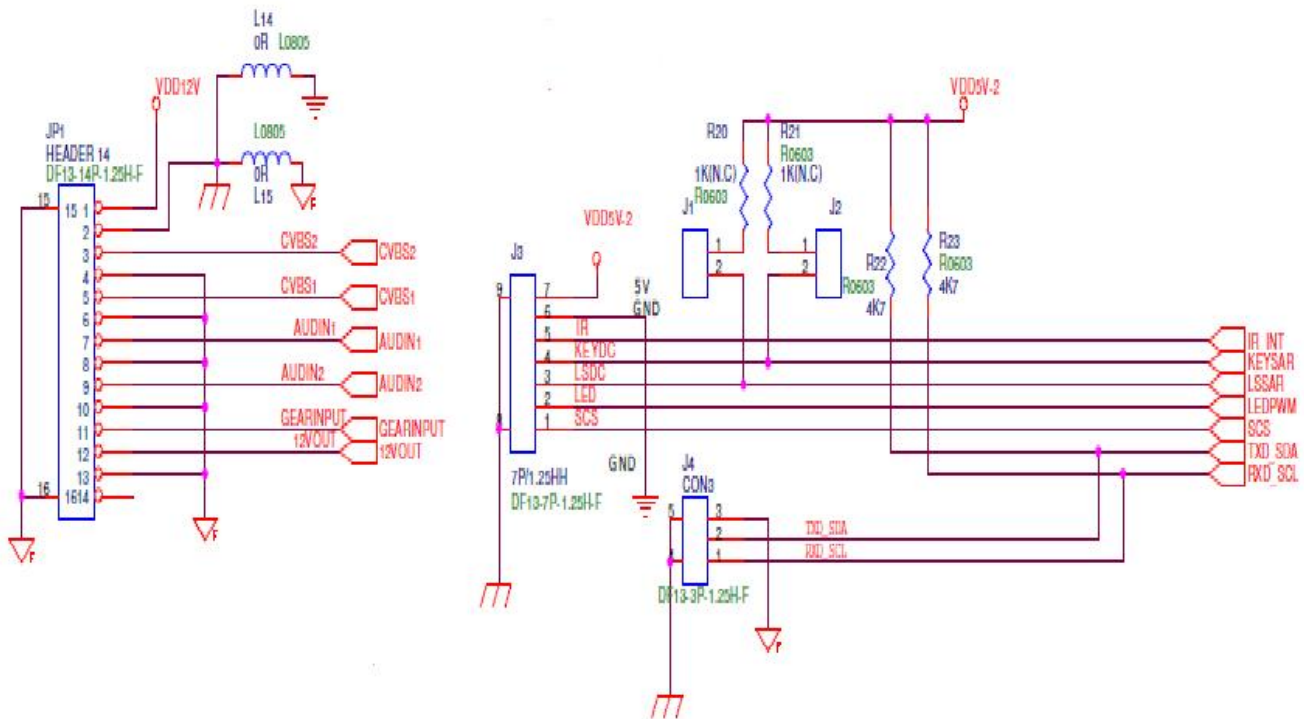
## 8.2. Board Dimensions



### 8.3. Keyboard Dimensions (Optional)



### 8.4. Diagram of Pin Assignments



## 9. Contact Information

For technical assistance with this product, please contact the supplier from whom the product was purchased.

For OEM inquiries, contact Videology Imaging Solutions:

<b>North / South America:</b>	<b>Europe:</b>
Videology Imaging Solutions Inc. 37M Lark Industrial Parkway Greenville, RI 02828 USA Tel: (401) 949-5332 Fax: (401) 949-5276	Videology Imaging Solutions Europe Neutronenlaan 4 NL-5405 NH Uden, Netherlands Tel: +31 (0) 413 256 261 Fax: +31 (0) 413 251 712

Please visit our website at: <http://www.videologyinc.com>

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