



FLAT DISPLAY TECHNOLOGY



This product is RoHS compliant

§ SPECIFICATION APPROVAL SHEET §

Fdt Tech Module No

Lx05012PS2-FDR

Description:

5" Color TFT-LCD Analog Interface Module

SPEC No.:

SAS-0811005

Version:

0.0

Issue Date:

November 24,2008

※ This approval sheet contains 16 pages including the cover and appendix.

Customer:

APPROVED BY:

Date: / / 08

APPROVED BY:

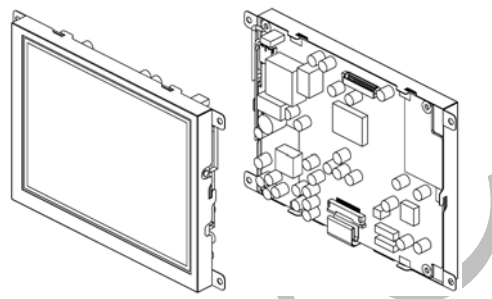
CHECKED BY:

DESIGNED BY:



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5" TFT LCD Analog Interface



■ Lx05012PS2-FDR

1. General Description

1.1 Features

- Fit Prime View PA050XSG (CCFL Backlight) TFT LCD
- Ultra Compact
- DC / DC DC/AC Video Decoder All In One
- NTSC/PAL Video Auto Switch
- Up / Down Reverse Screen
- Left / Right Reverse Screen
- Single Operation Voltage +12V

1.2 Applications

- Security
- Video Game
- Door Phone
- Video Phone
- Portable TV
- Instrument Display

1.3 Application Precautions

Do not use the products herein for the following equipment which demands extremely high performance in terms of functionality, reliability, or accuracy.

- Aerospace equipment
- Communication equipment for trunk lines.
- Control equipment for the nuclear power industry.
- Medical equipment related to life support, etc.

The other application that demands high reliability and functionality should first contact a sales representative.

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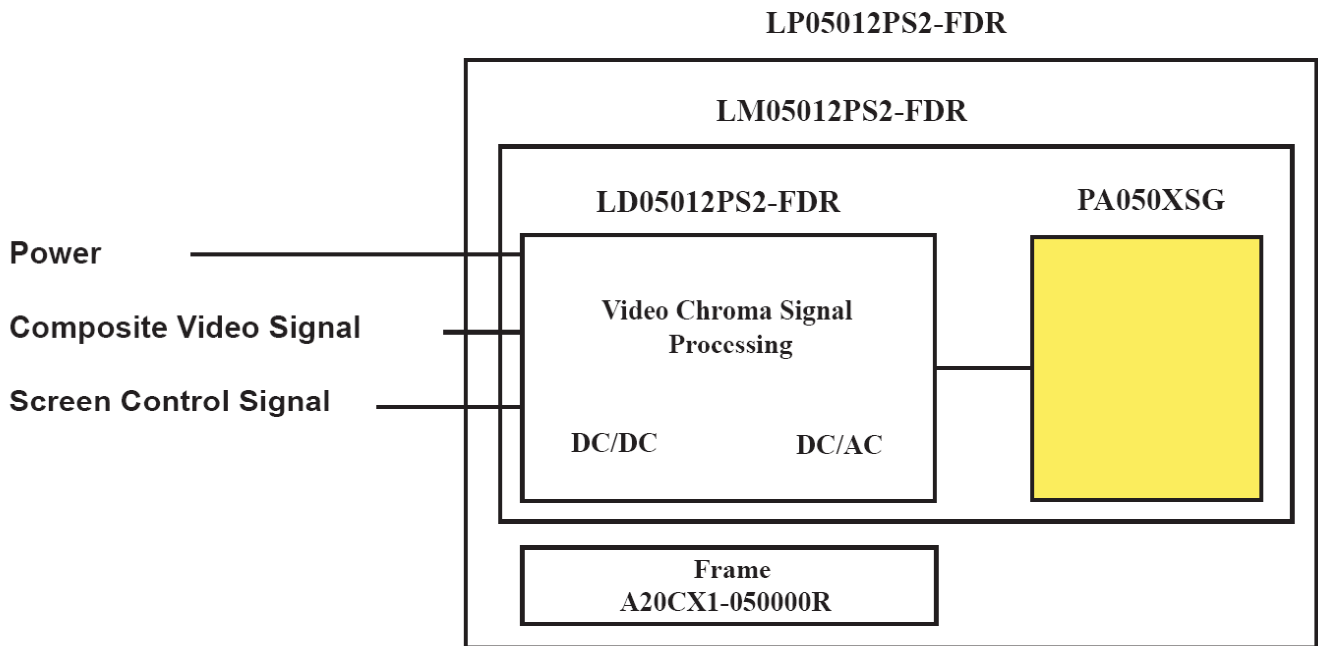


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3. Block Diagram

3.1 Block Diagram



4. TFT-LCD Information

4.1 TFT-LCD Mechanical Specifications

Parameter	Specifications	Unit
Screen Size	5.0 (diagonal)	inch
Display Format	320 x (R.G.B) x 234	dot
Weight	116±5	g
Active Area	102.72(W)×74.529(H)	mm
Pixel Pitch	0.321(W) 0.3185(H)	mm
Pixel Configuration	Stripe	
Outline Dimension	119.3(W)×91.4(H)×7.5 (typ.)(D)	mm
Surface Treatment	Anti-glare	

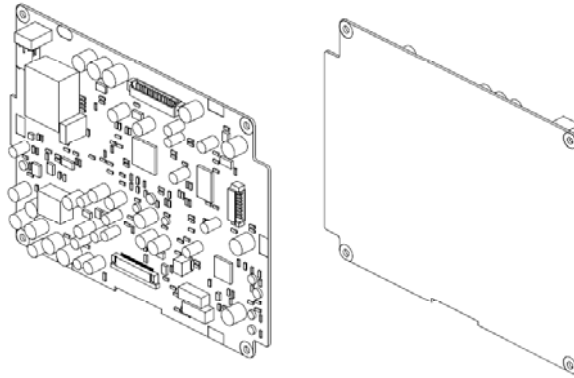
4.2 TFT-LCD Optical Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Remark
Viewing Angle	Horizontal	Left	65	70	-	deg	
		Right	65	70	-		
	Vertical	Top	35	40	-	deg	
		Bottom	55	60	-	deg	
Contrast Ratio	CR	At optimized Viewing angle	200	400	-	-	
Response time	Rise Fall	Tr	-	15	30	ms	
		Tf	-	30	50	ms	
Uniformity	U		70	80	-	-	
Brightness			350	400	-	-	
White Chromaticity	x	$\theta = 0^\circ$	0.27	0.30	0.33		
	y	$\theta = 0^\circ$	0.32	0.35	0.38		
Lamp Life Time			50000	-	-	Hr	

5. Order Information

5.1 Board

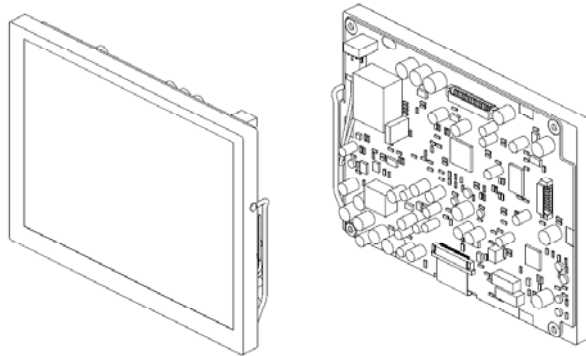
Board



Order Part Number	NTSC	PAL	NTSC/PAL Auto Switch	Master RGB Mode (Option)	Slave RGB Mode (Option)
LD05012PS2-FDR			☉		

5.2 Module

Module

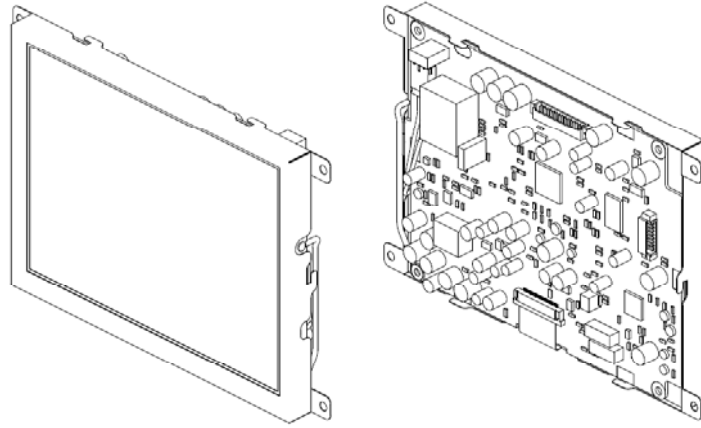


Order Part Number	NTSC	PAL	NTSC/PAL Switch	Master RGB Mode (Option)	Slave RGB Mode (Option)	TFT-LCD Panel PA050XSG
LM05012PS2-FDR			☉			☉

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Unit

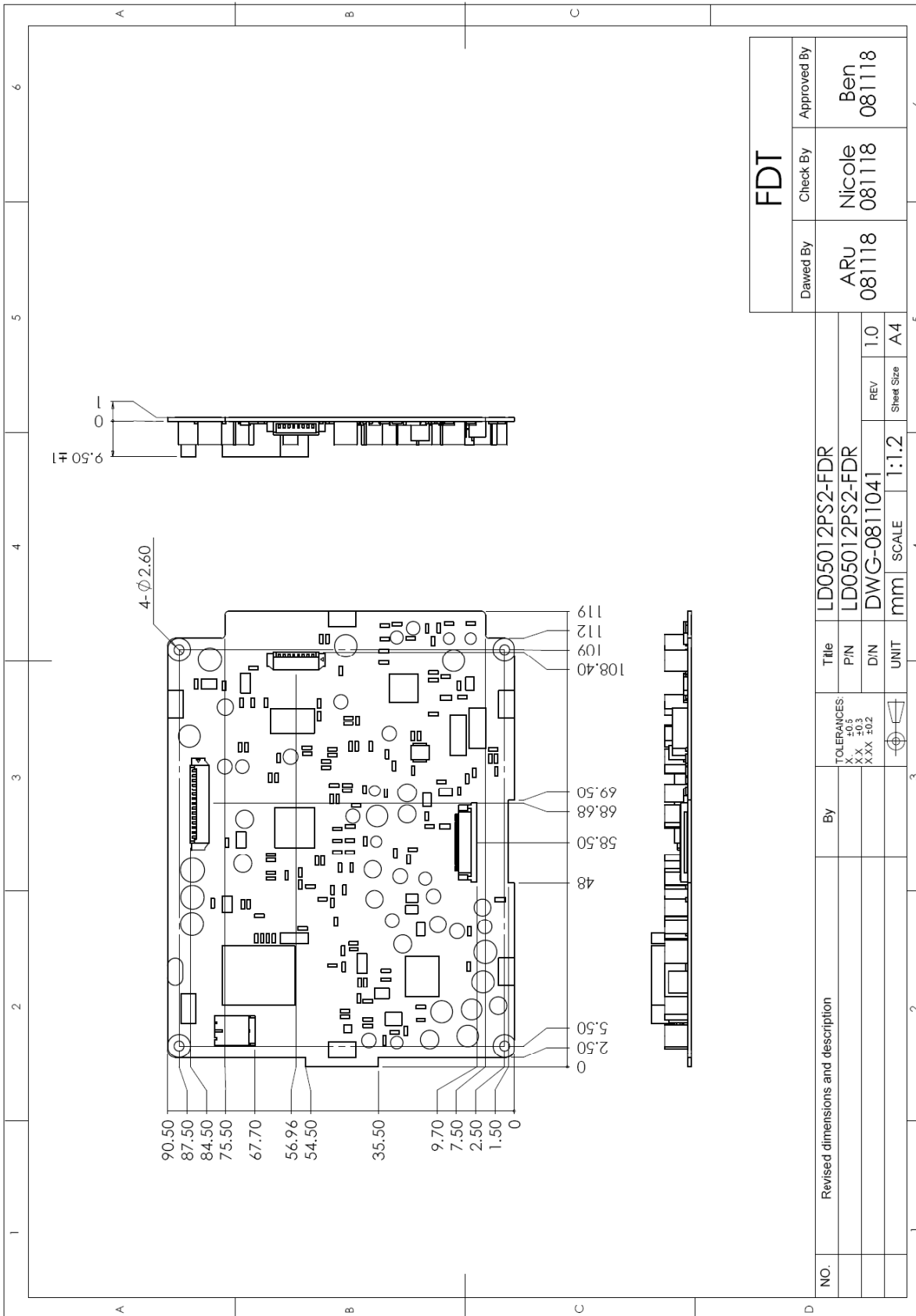


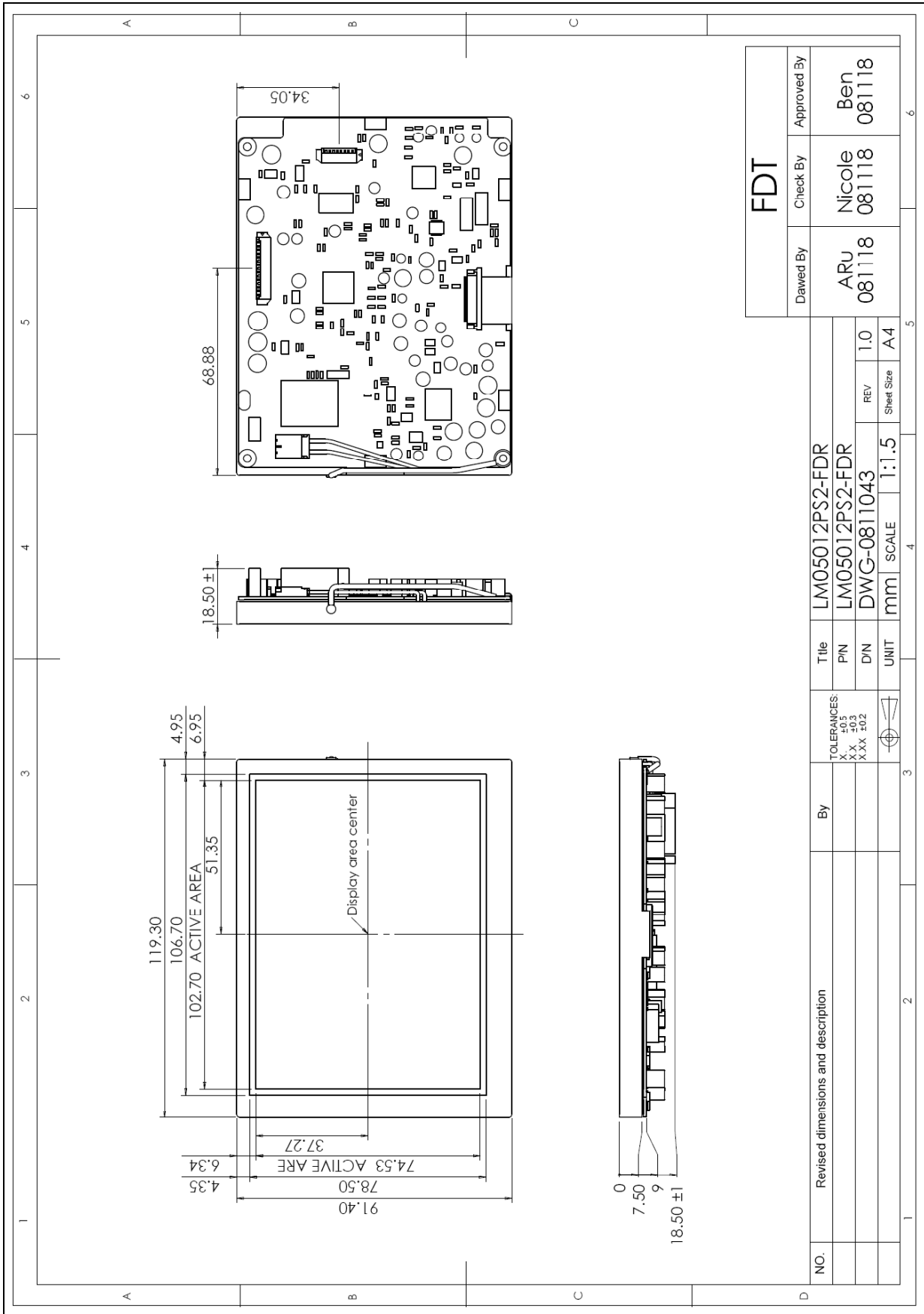
Order Part Number	NTSC	PAL	NTSC/PAL Switch	Master RGB Mode (Option)	Slave RGB Mode (Option)	Frame A20CX1-050000R	TFT-LCD Panel PA050XSG
LP05012PS2-FDR			⊙			⊙	⊙

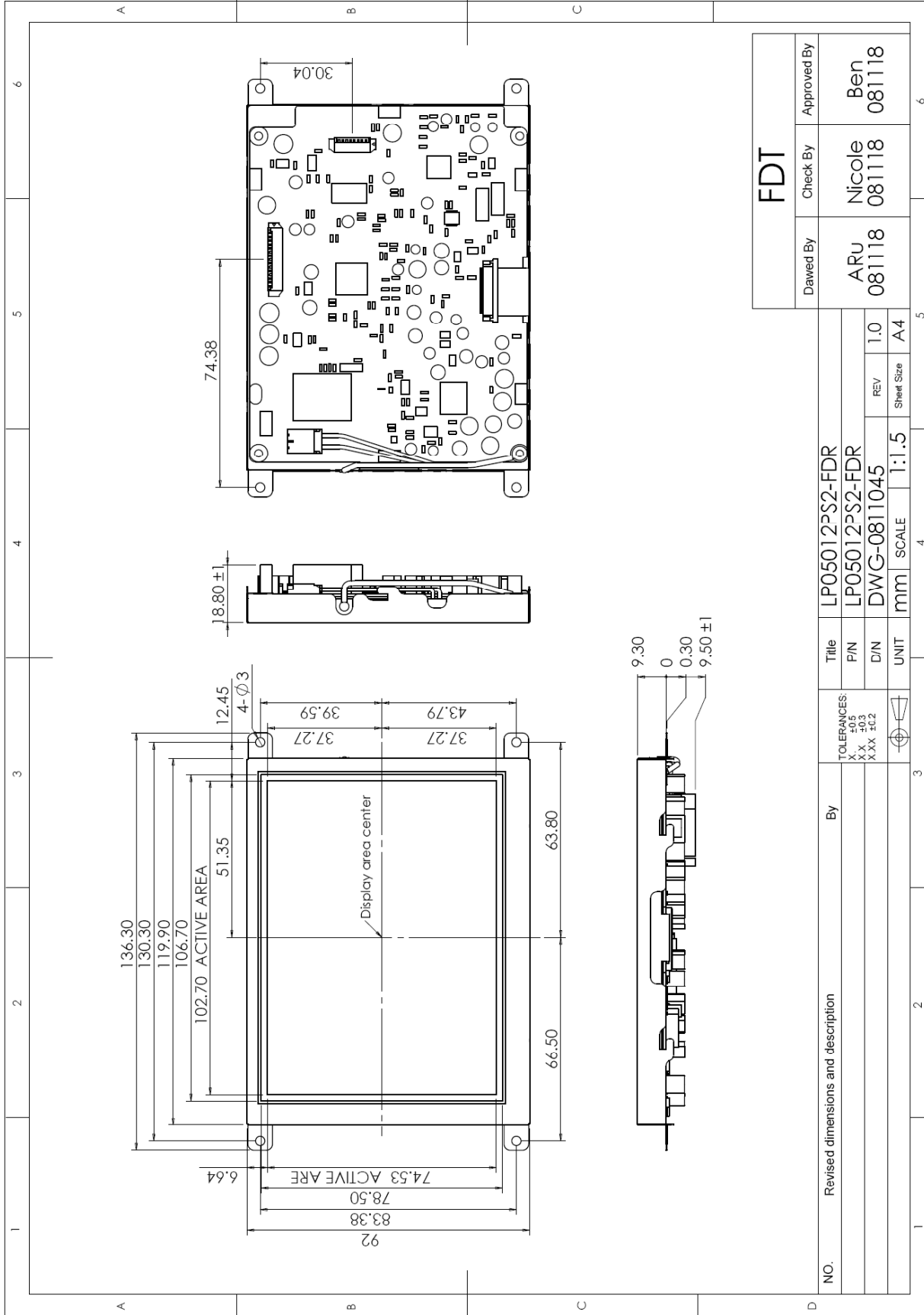
Tentative

6. Dimension Information

6.1 Driver Board







7. Pin Description

7.1 J301 : PVI LCD Panel I/O Terminals (FPC 30 pin below contact type)

Pin No	Symbol	I/O	Description	Remark
1	DIO1	I/O	Vertical Start Pulse	
2	CPV	I	Shift Clock For Gate Driver	
3	VGL	I	Power For Gate Driver (AC Voltage)	
4	NC	-	No Connection	
5	VEE	I	Negative Power Gate Driver (DC Voltage)	
6	NC	-	No Connection	
7	XOE	I	Output Enable For Gate Driver	
8	VSS	-	Ground For Digital Circuit	
9	VCC	I	Supply Voltage For Logic Control Circuit For Gate Driver	
10	NC	-	No Connection	
11	VGH	I	Positive Power For Gate Driver	
12	NC	-	No Connection	
13	U/D	I	Up/Down Control For Gate Driver	
14	DIO2	I/O	Vertical Start Pulse	
15	VCOM	I	Common Electrode Voltage	
16	STH1	I/O	Start pulse For Source Driver	
17	VDD1	I	Supply Power For Digital Circuit	
18	VSS1	-	Ground For Digital Circuit	
19	VDD2	I	Supply Power For Analog Circuit	
20	VSS2	-	Ground For Analog Circuit	
21	R/L	I	Left/Right Control For Source Driver	
22	VR	I	Video Input R	
23	VG	I	Video Input G	
24	VB	I	Video Input B	
25	CPH1	I	Sampling And Shift Clock For Source Driver	
26	CPH2	I	Sampling And Shift Clock For Source Driver	
27	CPH3	I	Sampling And Shift Clock For Source Driver	
28	STH2	I/O	Start Pulse For Source Driver	
29	OEH	I	Output Enable For Source Driver	
30	NC	-	No Connection	

Note : About TFT-LCD Panel detail information please refer PVI's PA050XSG Specification.

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7.2 J201 : Pin Assignment of Signal Input (Pitch1.25mm 15Pin , Side Entry Type)

Pin No	Symbol	I/O	Description	Remark
1	Vin	I	+12V Voltage DC Input	
2	GND	I	Power Ground	
3	GND	I	Power Ground	
4	GND	I	Signal Ground	
5	Video in	I	Video Input	
6	+5V	O	+5V Voltage DC Output	Note 1
7	Bright	I	Brightness Control	
8	Contrast	I	Contrast Control	
9	Color	I	Color Control	
10	Tint	I	Tint Control	Note 2
11	NTSC/PAL	O	Auto Detect System Output	Note 3
12	Left / Right	I	Left / Right Reverse	Note 4
13	Up / Down	I	Up / Down Reverse	Note 4
14	Dimmer	I	Backlight Brightness Control	Note 5
15	ENABLE	I	Enable Control For Backlight	Note 6

Note1: The +5V DC supply external control circuit. (Max, out is 10mA)

Note2: The TINT is only operating in NTSC system.

Note3: The output High for NTSC mode and Low for PAL mode.

Note4: Default is reversed scanning (High) and Low is for normal scanning.

Note5: This pin is floating that backlight is maximal brightness.

Note6: High (+5V) is disable Low(0V) or floating is enable .

7.3 J202 : Output for LCD Panel Backlight

Pin No	Symbol	I/O	Description	Remark
1	HV+	O	Connect to Pink Wire	
2	HV-	-	Connect to White Wire	

8. Absolute Maximum Ratings

8.1 Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Remark
Input Voltage	Vin	+9	+14	V	
Video Input Signal	Video in	0.5	2.0	Vp-p	@75Ω
Digital Input Signal	TTL	+0.3	+5.3	V	
Storage Temperature		-20	+70	°C	
Operation Temperature		-10	+60	°C	

Tentative

9. Recommended operating conditions

9.1 Electrical Characteristics

Parameter	Symbol	I/O	Min	Typ	Max	Unit	Note
Input Voltage	Vin	I	+10	+12	+14	V	
Total Current	Iin	I	410	446	490	mA	
Power Consumption		I		5.35		W	@+12v
Video Input Signal	Video in	I		1.0		Vp-p	@75Ω
Output Voltage	+5VA	O		+5V		V	
Brightness Adjust	Bright	I	1.95	2.06	2.21	V	
Contrast Adjust	Contrast	I	2.73	2.91	3.13	V	
Color Adjust	Color	I	2.4	3.01	3.71	V	
Tint Adjust	Tint(NTSC only)	I	1.5	2.98	3.7	V	
Video Auto Detect	NTSC/ PAL	O		TTL		V	
Screen Reverse	Left / Right	I		TTL		V	
Screen Reverse	UP / Down	I	0	TTL		V	

9.2 Panel Backlight Data

Parameter	Symbol	Min	Typ	Max	Unit	Note
Lamp Voltage	VL	392	427	480	Vrms	IL=6.0mA, (±10%)
Lamp Current	IL	3	6	8	mA	

9.3 Optics Sample Test Data

Parameter	White Window	Red	Green	Blue	Remark
S/N : 001 x	TBD	TBD	TBD	TBD	±15%
y	TBD	TBD	TBD	TBD	
L(cd/m ²)	TBD				
TC(K)	TBD				

NOTE : 1. Luminance Meter : BM-7 FAST(TOPCON)

2.Video Pattern Generator: FLUKE PM54200

3. Measurement Distance : 500mm±50mm

4. TOPCON BM-7 Luminance Meter 2° filed of view is used in the testing

(After 10min ~20min operation)

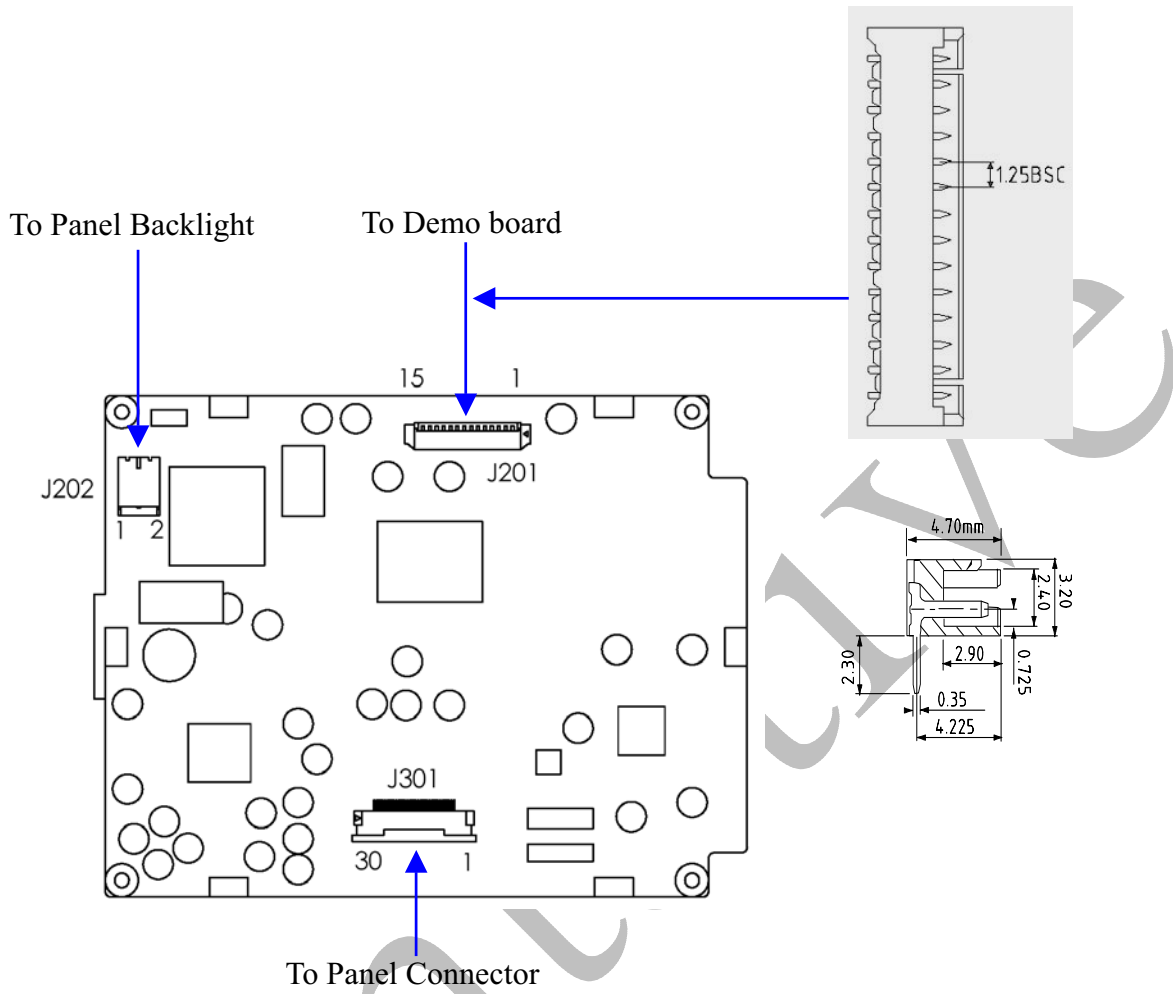
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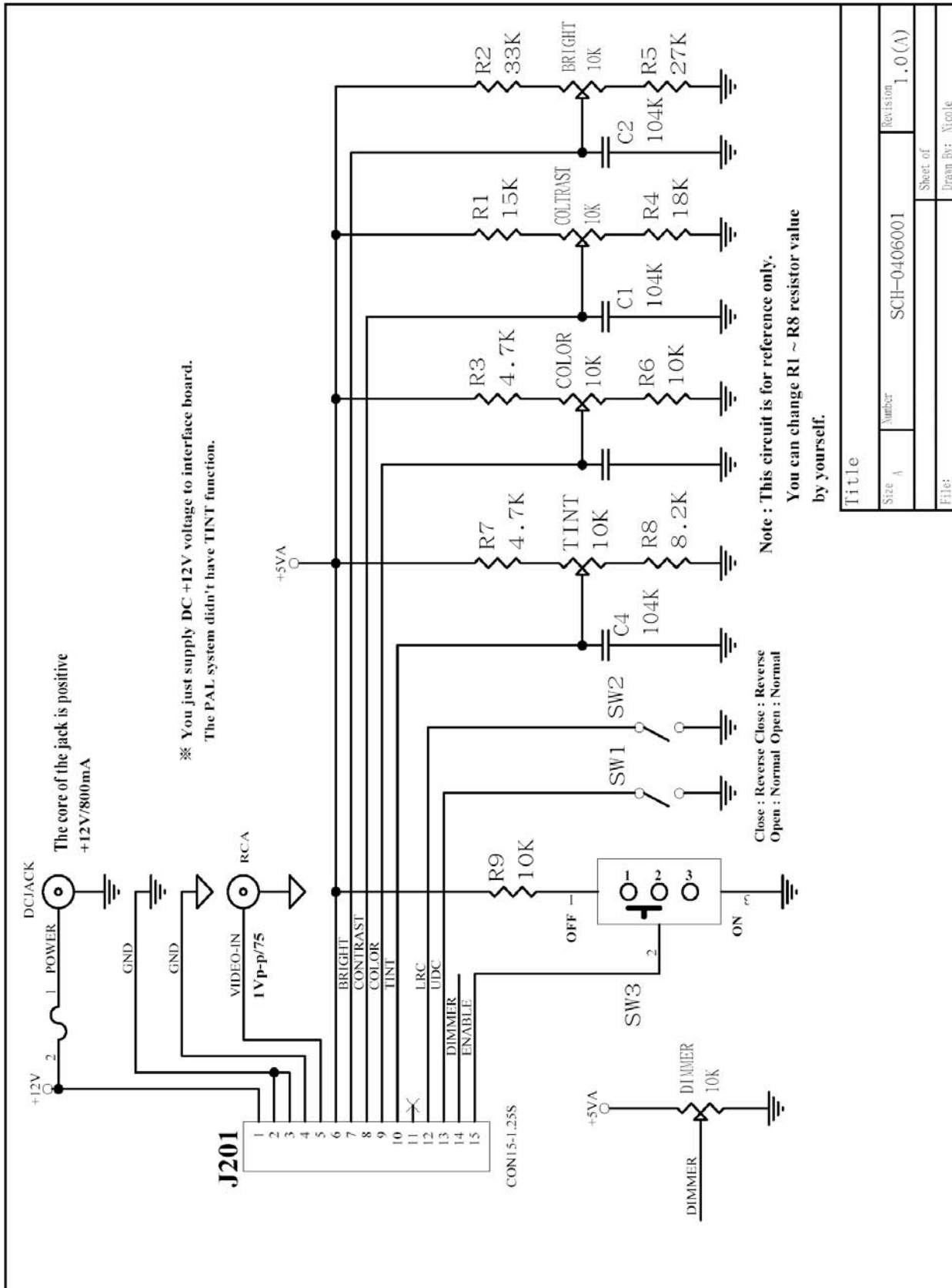
10. Operation manual

10.1 Driver Board Manual



11. Application Schematic Diagram

11.1 Application Circuit



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