

Haier

GB980W

Service Manual

TABLE OF CONTENTS

WARNING.....	3
A. IMPORTANT SAFETY INSTRUCTION.....	3
B. SPECIFICATIONS	4
C. TIMING CHART.....	5
D. ADJUSTMENT PROCEDURE.....	7
E. TROUBLE SHOOTING HINTS.....	8
F. BLOCK DIAGRAM.....	12
G. EXPLODED DIAGRAM.....	13
H. SCHEMATIC DIAGRAM.....	14
I. PCB LAYOUT DIAGRAM.....	22

WARNING

To prevent from fire or shock hazard,do not expose monitor to any rain or any form of water.High voltage is inside the monitor so please do not remove the back cover of the cabinet if you are not a qualified monitor engineer.Contact the local dealer or the nearest **Proview** branch office if you need help.

A. IMPORTANT SAFETY INSTRUCTION

Prior to using this service manual,please ensure that you have carefully followed all the procedures outlined in the user's manual for this product.

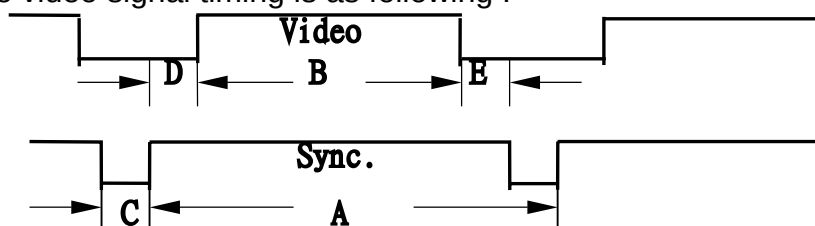
1. Read all of these instructions.
2. Save these instructions.
3. Follow all warnings and instructions marked on the product.
4. Unplug this product from the wall outlet before cleaning.Do not use liquid cleaner or aerosol cleaner, use a damp cloth for cleaning.
5. Do not use this product near water.
6. Do not place this product on an unstable cart,stand or table.The product may fall,causing serious damage to the product.
7. Slots and openings in the cabinet and the back or bottom are provided for ventilation,to ensure reliable operation of the product and to protect it from overheating.Those openings must not be blocked or covered.The openings should never be blocked by placing the product on a bed,sofa, rug, or other similar surface.This product should not be placed in a built-in installation,since proper ventilation is provided.
8. This products should be operated with the type of power source indicated on the marked label. If you are not sure of the type of power is available, consult with your dealer or local power company.
9. This product is equipped with a 3-wire grounding type plug,a plug having a third (grounding) pin.This plug will only fit into a grounding-type power outlet.This is a safety feature.If you are unable to insert the plug into the outlet,contact your electrician to replace your obsolete outlet.Do not damage the purpose of the grounding-type plug.
10. Do not allow anything to rest on the power cord.Do not locate this product where persons will walk on the cord.
11. Never push any kinds of objects into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock.Never spill any kinds of liquid on the product.
12. Do not attempt to service this product yourself,as opening or removing covers may expose you to dangerous voltage points or other risk.Refer all servicing to service personnel.
13. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions.
 - a. When the power cord or plug is damaged or frayed.
 - b. If liquid has been spilled into the product.
 - c. If the product has been exposed to rain or water.
 - d. If the product does not operate normally,when the operating instructions are followed.Adjust only those controls involved in the operating instructions ,since improper adjustment of other controls may result in damage and will often require extra work by a qualified technician to restore the product to normal operation.
 - e. If the product has been dropped or the cabinet has been damaged.
 - f. If the product exhibits a distinct change in performance,indicating a need for service.

B. SPECIFICATIONS

Panel General Specification	
Panel Model	CMO M190A1-P02
Screen Diagonal	19" TFT
Active Display Area	410.4mm (H) x 256.5mm (V)
Pixel Pitch	0.285(H) x 0.285(V) mm
Number of Colors	16.2M colors
View Angle	
Horizontal	+/-75 degree
Vertical	+70/-60 degree Typical
Luminance of White	300m ² (Typical)
Contrast Ratio (Typical)	850:1
Maximum Resolution	1440 x 900 @ 75Hz
Recommend Resolution	1440 x 900 @ 75Hz
Synchronization Range	
Horizontal	31 – 91 KHz
Vertical	56– 75 Hz
Pixel Rate	135 MHz
User Control	5 Key Switch
OSD Function	Auto, Brightness, Contrast, H-position, V-position, H-size, Phase, Reset, Color selection (R, G, B, cool, warm), OSD , Language, Exit.
Power Source	90 – 264 Vac 47 / 63 Hz
Power Consumption	50W
Connection Type	15 Pin D-Sub Type;
Input Signal	
Video	D-Sub: Analog R.G.B. , 0.7Vp-p / 75 Ohms
Sync.	TTL level,positive or negative polarity
Color Temperature	Cool / Warm / user mode
Dimension (WxHxD)	532.0 x 500.0 x 140(mm)
Monitor Weight	6.3 kg
Base Operation	
Tilt	-5 / + 25 degree
Power Saving	
ON	< 50W
Sleep mode	< 2W
OFF	< 2W
Signal Connector Pin Assignment	
D-SUB Pin No.	1. Red Video 2.Green Video 3.Blue Video 4.GND 5.Self Test 6. Red Ground 7. Green Ground 8. Blue Ground 9. +5V from PC 10. Sync. GND 11. GND 12. SDA For DDC2B 13. H-sync. 14. V-sync-DDC1 15. SCL For DDC2B
Sound Output	No Speaker

C . TIMING CHART

The video signal timing is as following :



A: Period
B: Active
C: Sync Width
D: Back Porch
E: Front porch

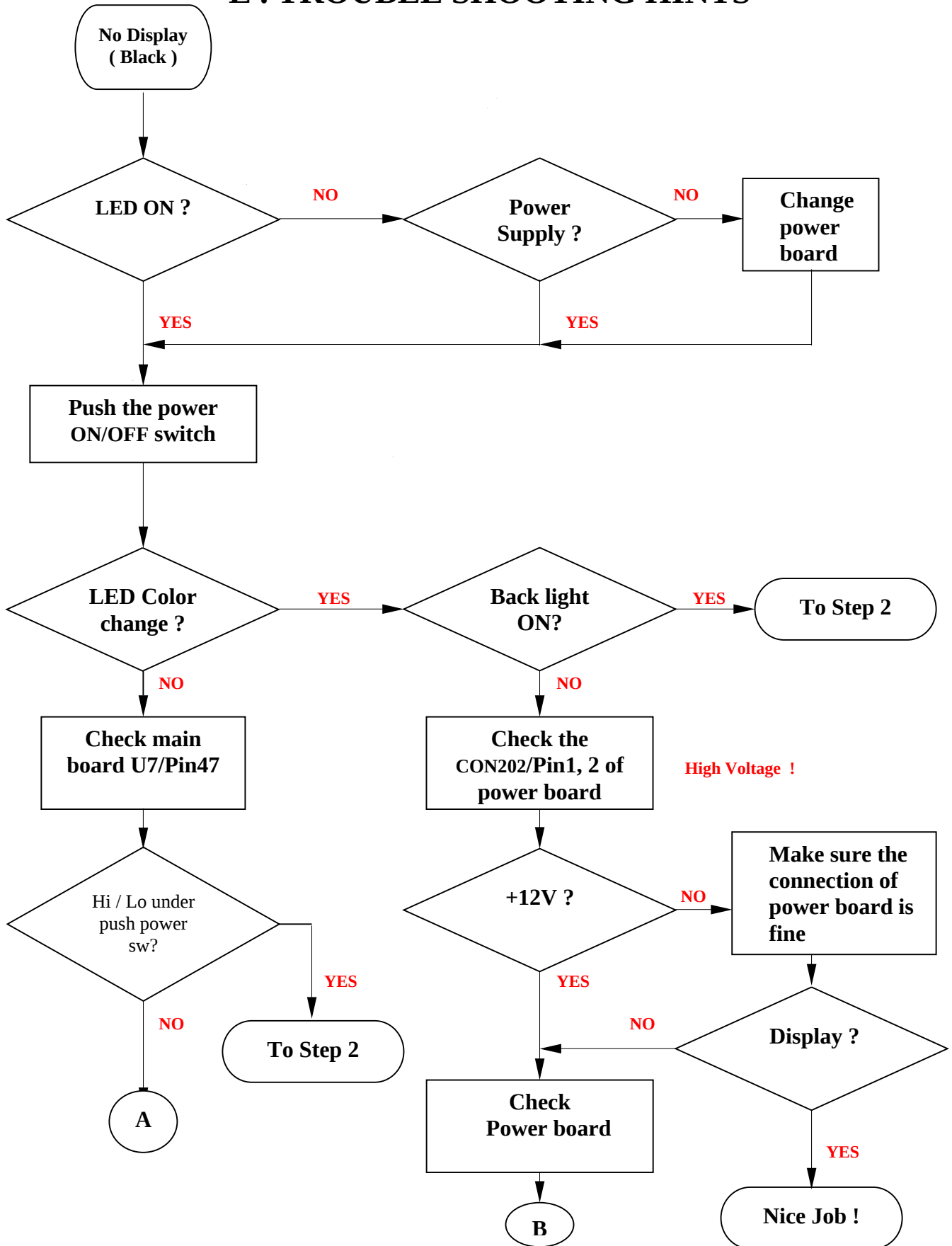
Preset Modes	VGA 720X400	VGA 640X480	VESA 640X480	VESA 640X480	VESA 800X600	VESA 800X600	VESA 800X600	VESA 800X600
Dot Rate	28.322MHz	25.175MHz	31.500MHz	31.500MHz	36.000MHz	40.000MHz	50.000MHz	49.500MHz
F.H	31.469KHz	31.469KHz	37.861KHz	37.500KHz	35.156KHz	37.879KHz	48.077KHz	46.875KHz
A-period	31.777us	31.778us	26.413us	26.667us	28.444us	26.400us	20.800us	21.333us
B-Active	25.422us	25.422us	20.317us	20.317us	22.222us	20.000us	16.000us	16.162us
C-Sync. width	3.813us	3.813us	1.270us	2.032us	2.000us	3.200us	2.400us	1.616us
D-Back Porch	1.907us	1.589us	3.810us	3.810us	3.556us	2.200us	1.280us	3.232us
E-Front Porch	0.635us	0.954us	1.016us	0.508us	0.666us	1us	1.12us	0.323us
F . V	70.087Hz	59.941Hz	72.810Hz	75.000Hz	56.250Hz	60.317Hz	72.188Hz	75.000Hz
A-Period	14.268ms	16.683ms	13.734ms	13.333ms	17.778ms	16.579ms	13.853ms	13.333ms
B-Active	12.711ms	15.253ms	12.678ms	12.800ms	17.067ms	15.840ms	12.480ms	12.800ms
C-Sync. width	0.064ms	0.064ms	0.079ms	0.080ms	0.057ms	0.106ms	0.125ms	0.064ms
D-Back Porch	1.112ms	0.794ms	0.528ms	0.427ms	0.626ms	0.607ms	0.478ms	0.448ms
E-Front Porch	0.381ms	0.572ms	0.449ms	0.026ms	0.028ms	0.026ms	0.77ms	0.021ms
H/V SYNC	- +	- -	- -	- -	+ +	+ +	+ +	+ +
Interlace d	NON	NON	NON	NON	NON	NON	NON	NON

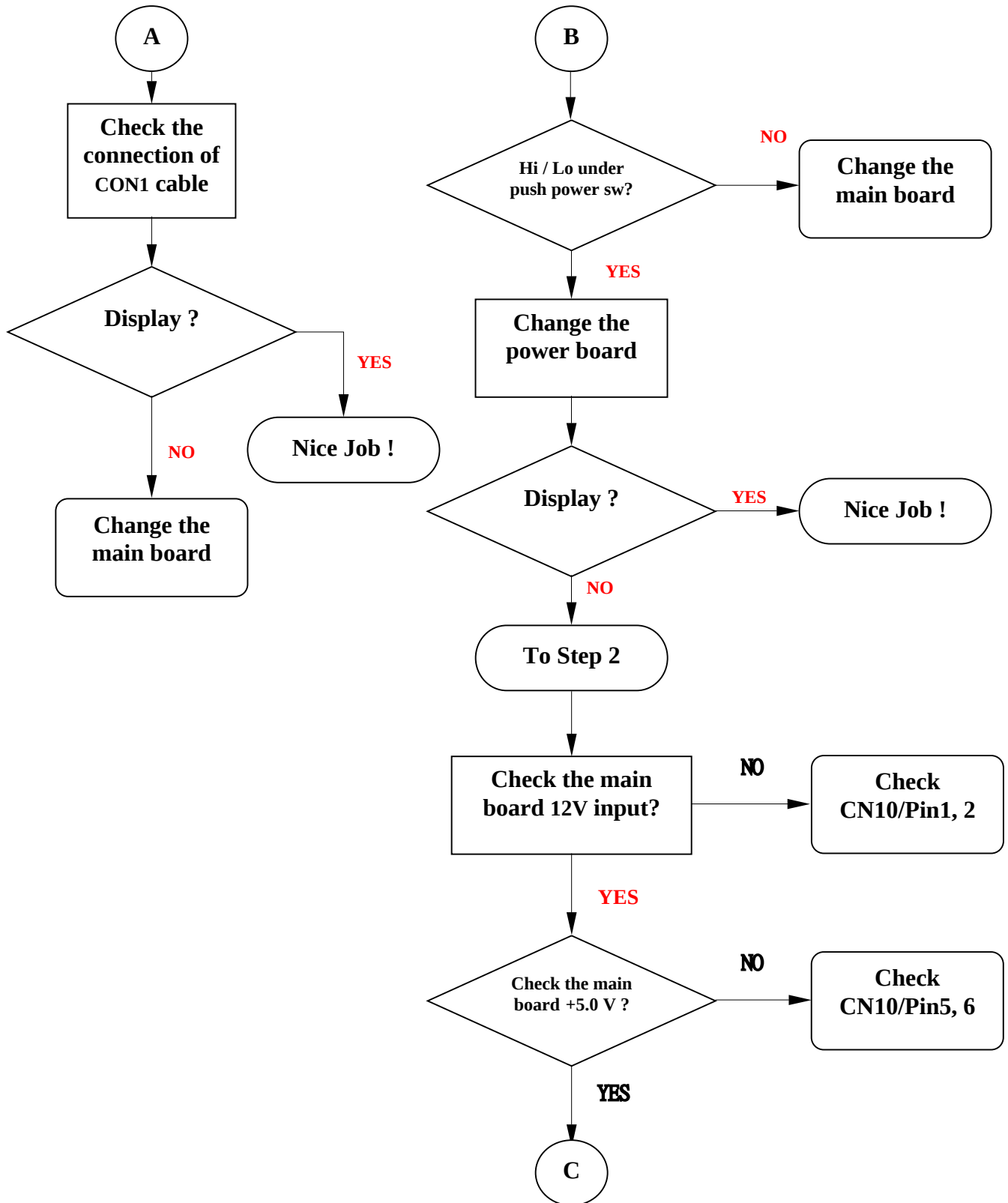
Preset Modes	VESA 1024X768	VESA 1024X768	VESA 1024X768	VESA 1280X1024	VESA 1280X1024	VESA 1152 X864	VESA 1440X900	VESA 1440X900	VESA 1440X900
Dot Rate	65.000MHz	75.000MHz	78.750MHz	108.00MHz	135.00MHz	108.00MHz	88.750MHz	106.50MHz	136.75MHz
F.H	48.363KHz	56.476KHz	60.023KHz	63.98KHz	79.976KHz	67.5 us KHz	55.469KHz	55.935KHz	70.635KHz
A-period	20.677us	17.707us	16.660us	15.630us	12.504us	14.815 us	18.028us	17.878us	14.157us
B-Active	15.754us	13.653us	13.003us	11.852us	9.481us	10.667 us	16.225us	13.521us	10.530us
C-Sync. width	2.092us	1.813us	1.219us	1.037us	1.067us	1.185 us	0.361us	1.427us	1.112us
D-Back Porch	2.462us	1.920us	2.235us	2.296us	1.837us	2.370 us	0.901us	2.178us	1.814us
E-Front Porch	0.369us	0.321us	0.203us	0.444us	0.119us	0.593 us	0.541us	0.751us	0.702us
F . V	60.004Hz	70.069Hz	75.029Hz	60.020Hz	75.025Hz	75.00 0Hz	59.901Hz	59.887Hz	74.984Hz
A-Period	16.666ms	14.272ms	13.328ms	16.661ms	13.329ms	13.333ms	16.694ms	16.698ms	13.336ms
B-Active	15.880ms	13.599ms	12.795ms	16.005ms	12.804ms	12.8ms	16.225ms	16.090ms	12.741ms
C-Sync. width	0.124ms	0.106ms	0.050ms	0.047ms	0.038ms	0.044ms	0.108ms	0.107ms	0.085ms
D-Back Porch	0.600ms	0.513ms	0.466ms	0.594ms	0.475ms	0.474ms	0.306ms	0.447ms	0.467ms
E-Front Porch	0.062ms	0.054ms	0.017ms	0.016ms	0.013ms	0.015ms	0.054ms	0.054ms	0.042ms
H/V SYNC	- -	- -	+ +	+ +	+ +	+ +	- +	- +	- +
Interlaced	NON	NON	NON	NON	NON	NON	NON	NON	NON

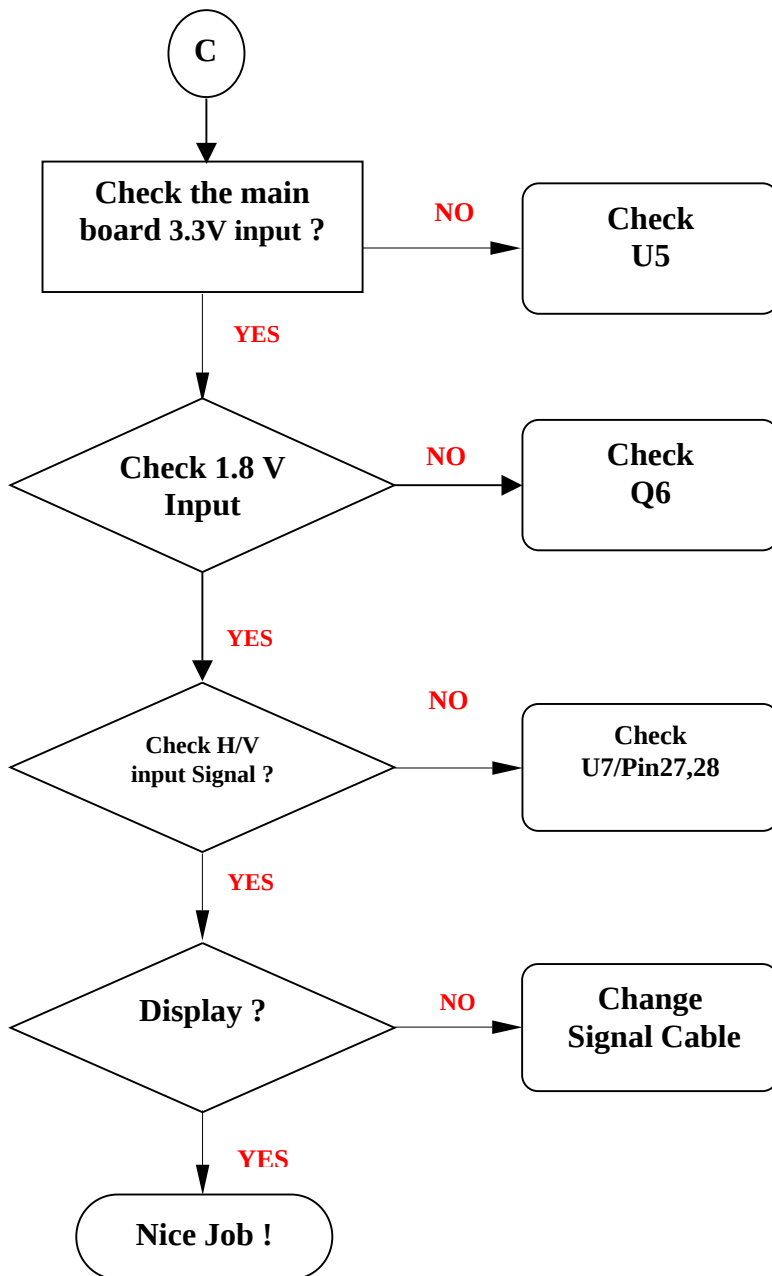
D. ADJUSTMENT PROCEDURE

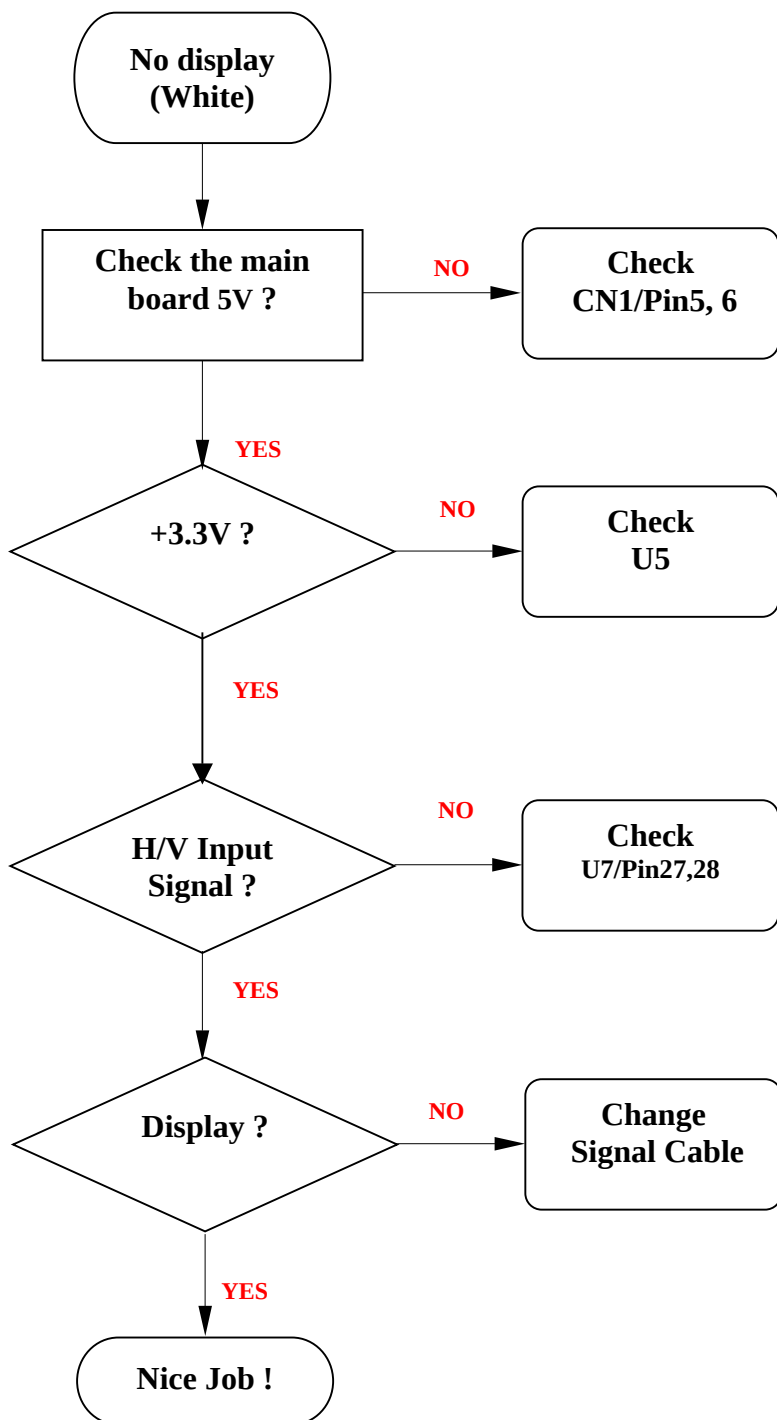
ITEM Program Menu.		# Test Meter * Test Point ● Pattern	Operation	Check Value
A	Power supply Check	# Digital Voltmeter * CON 201 @ Crosshatch Pattern (1440x900, 75Hz)	1. Plug power cable into the LCD monitor directly. 2. Make sure the voltage of the power plug (CON201) on the Power Board to the value shown at right.	220Vac ±0.2V
B	Power Saving Check	# Wattmeter # PC or Pattern generator @ Crosshatch Pattern (1440x900, 75Hz)	1. Unplug the signal cable into the monitor. 2. Turn the power switch of the monitor ON . 3. Check monitor power indicator light up blue flashing every other second. 4. Make sure the wattmeter value shown at right. 5. OSD will be display “ NO SIGNAL ” Picture.	<2W
C	Into Factory mode	# PC or Pattern generator @ Crosshatch Pattern (1440x900, 75Hz)	1. Hold Down key, then turn the power switch of the monitor off. 2. Hold Up key, then turn the power switch of the monitor on. 3. You can enter factory adjustment mode.	
D	Auto mode Check	# PC or Pattern generator @ Crosshatch Pattern (1440x900, 75Hz)	1. Press and release the Auto key to adjust display mode to its utmost performance according to VGA setting.	
E	White Balance Adjust	# PC or Pattern generator @ White Pattern (1440x900, 75Hz)	1. Move the OSD to the COLOR mode (AUTO COLOR). 2. set color is Cool using the OSD, Check the value shown at right. $Y = 230 \pm 15 \text{cd/m}^2$ $x = 0.283 \pm 0.015$ $y = 0.298 \pm 0.015$ 3. set color is Warm using the OSD, Check the value shown at right. $Y = 230 \pm 15 \text{cd/m}^2$ $x = 0.313 \pm 0.015$ $y = 0.329 \pm 0.015$	
F	OSD Language Setting	# PC or Pattern generator	1. Move the OSD to the OSD setting mode 2. Move the OSD to the LANGUAGE mode. 3. You can choose one of the language you need.	

E . TROUBLE SHOOTING HINTS

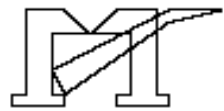




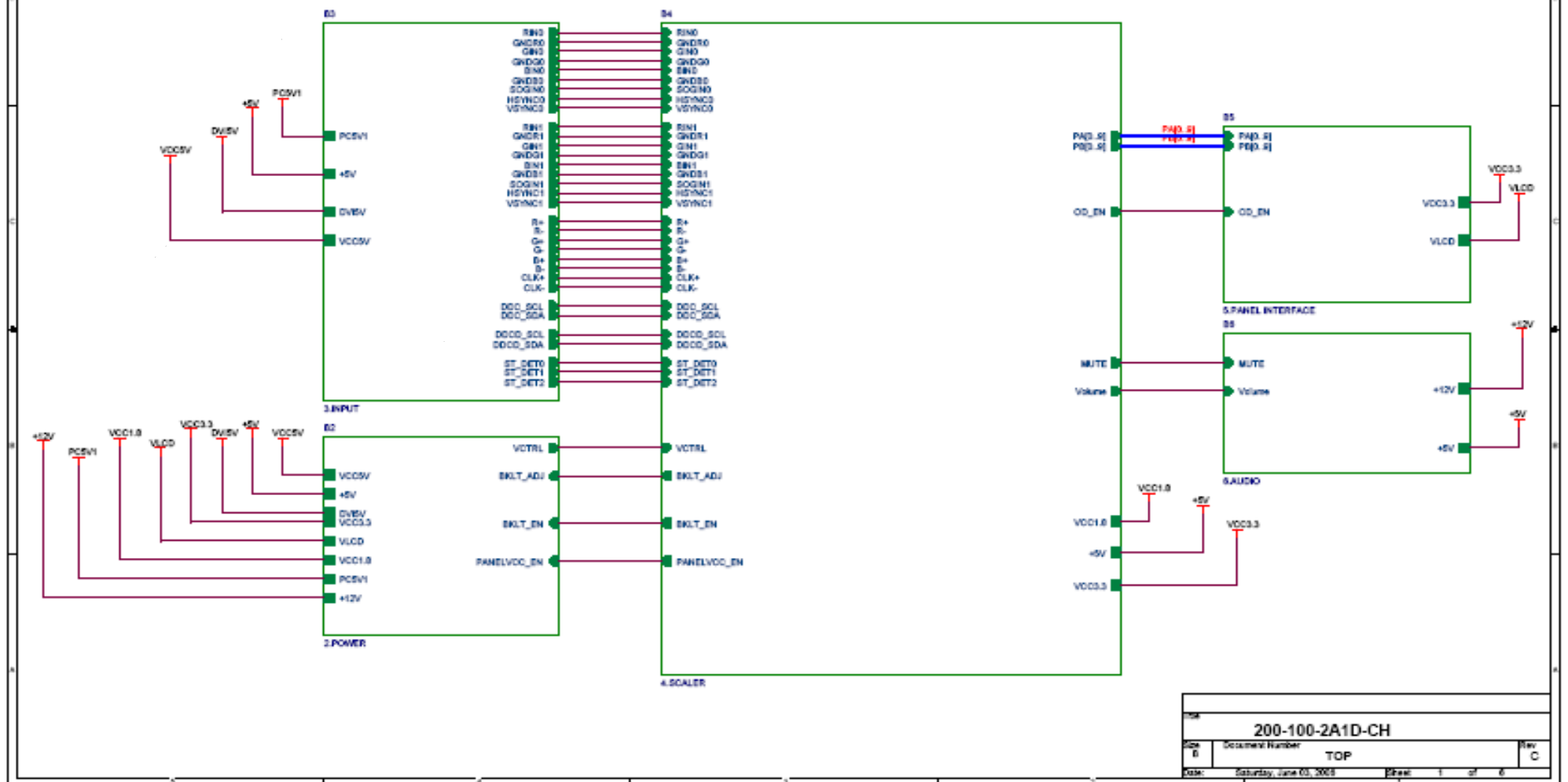




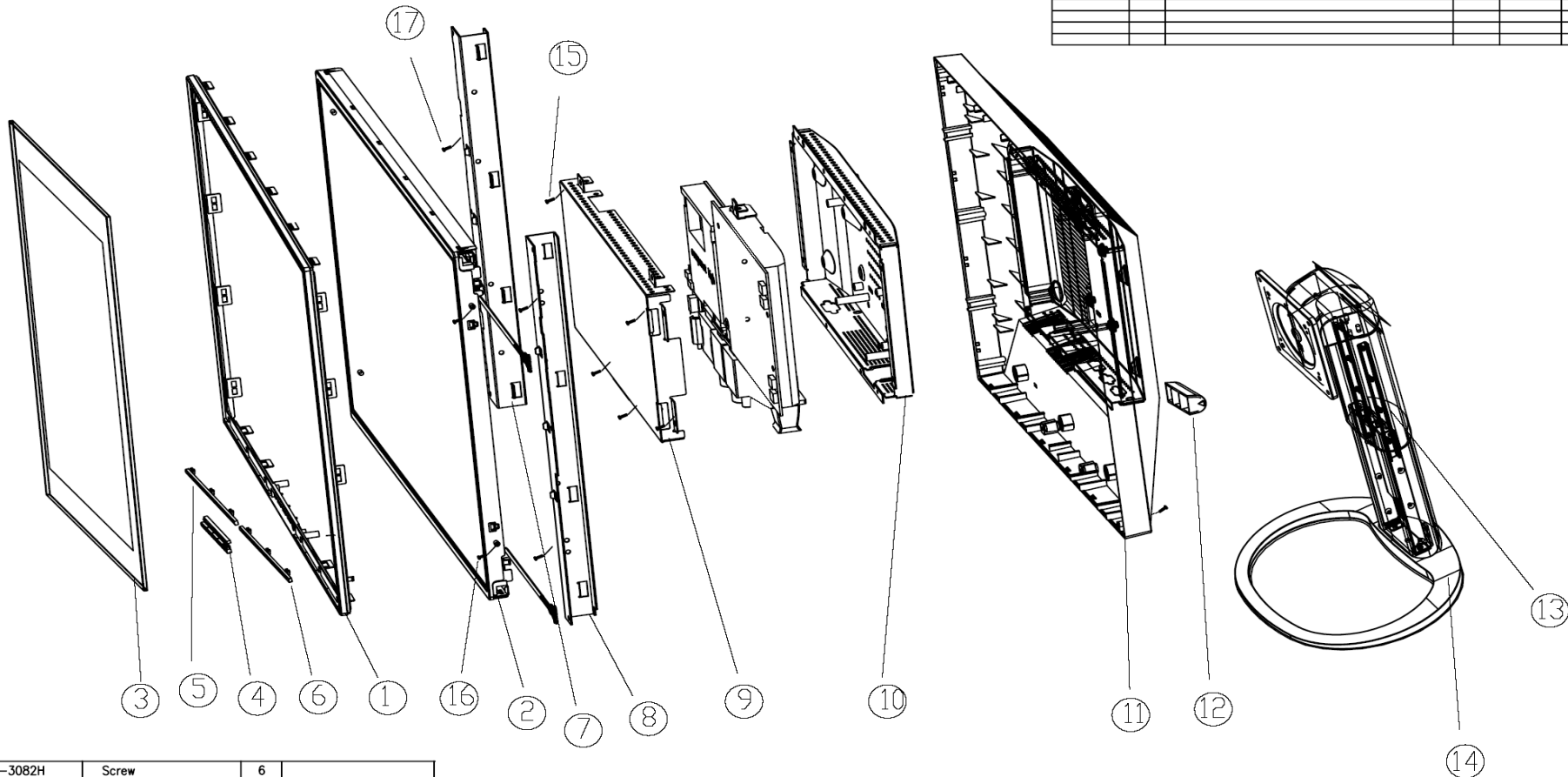
G. BLOCK DIAGRAM



TSUM66AJ SCHEMATIC



G. EXPLODED DIAGRAM



17	107-005-3082H	Screw	6	
16	101-005-3033H	SCREW	4	
15	107-010-3073H	Screw	6	
14	123-000-XH1701H	BASE	1	
13	820-06A-GA980KH	STAND ASSY	1	
12	154-H01-FV926W6A-AH	HINGE COVER	1	
11	151-001-KFPS6A-12H	REAR COVER	1	
10	123-B0D-LP917WH	METAL CASE	1	
9	123-002-CA787DGH	METAL COVER	1	
8	121-000-GB980WRH	BKT HOLD_ R	1	
7	121-000-GB980WLH	BKT HOLD_ L	1	
6	154-501-GB980WH	DECORATION_ R	1	
5	154-500-GB980WH	DECORATION_ L	1	
4	154-002-GB980WH	BUTTON FUNC	1	
3	928-400-GB980WH	GLASS	1	
2	705-570-601H	Panel	1	
1	151-A00-KFPS6AH	MIDDLE FRAME	1	
ITEM	PART NO.	DESCRIPTION	QTY	REMARK

GB980W Exploded Diagram

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN TOLERANCES		PART NAME		Explode		MODEL NAME		GB980W	
USED		NEXT ASSY.		PART NO					
APPLICATION		METRIC 0.X ±0.15		ANGLES					
THIRD ANGLE		0.XX ±0.10		±0.5°		SCALE			
MATERIAL:				DATE		26-APRIL-06		DRAWING BY	
FINISH:						KEY		APPROVED FILE NO.	
DO NOT SCALE DRAWING						DRAWING FILE NO.			
						Preview		NOTE : A3	

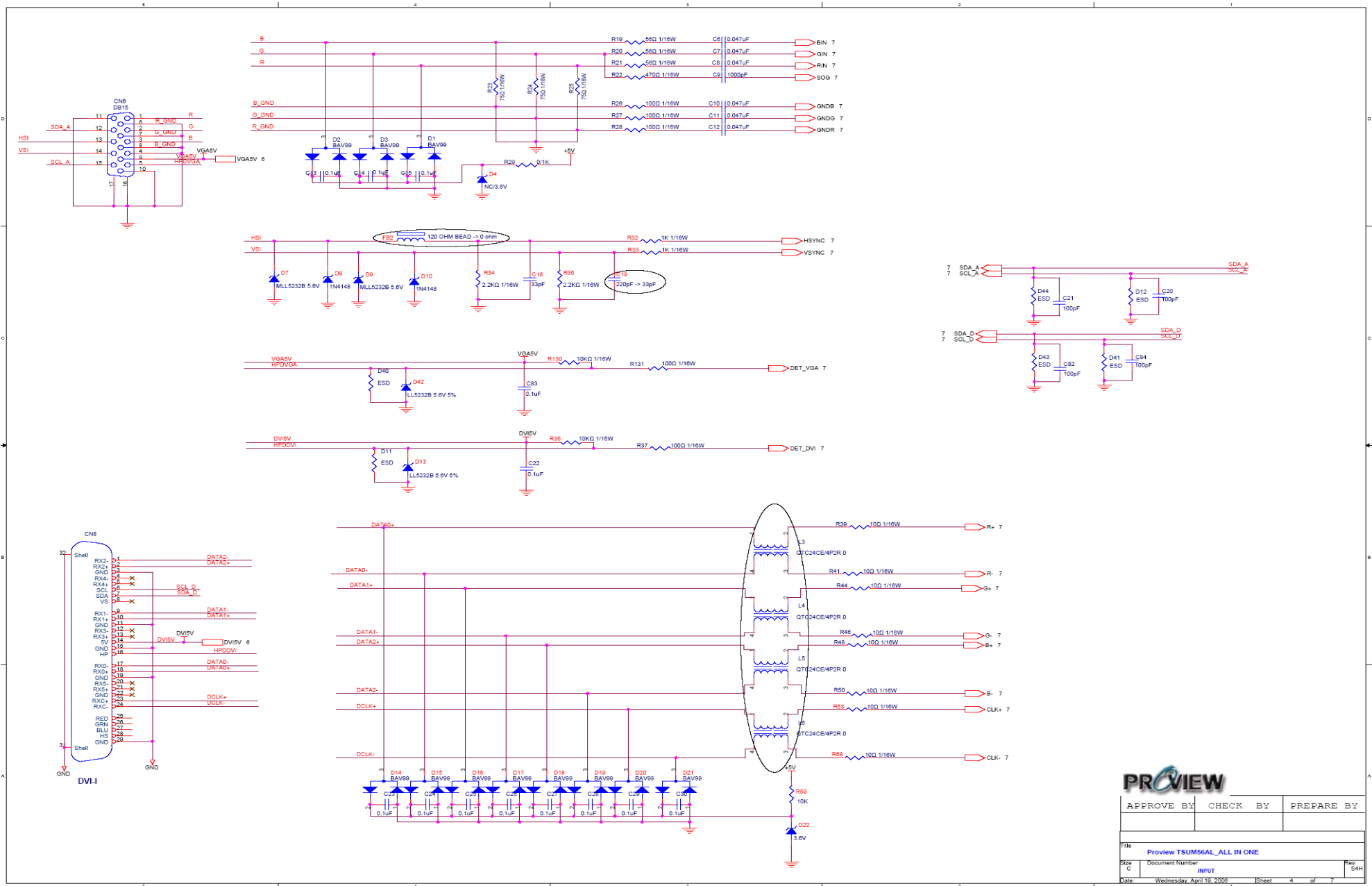
H. SCHEMATIC DIAGRA

TOP VERSION

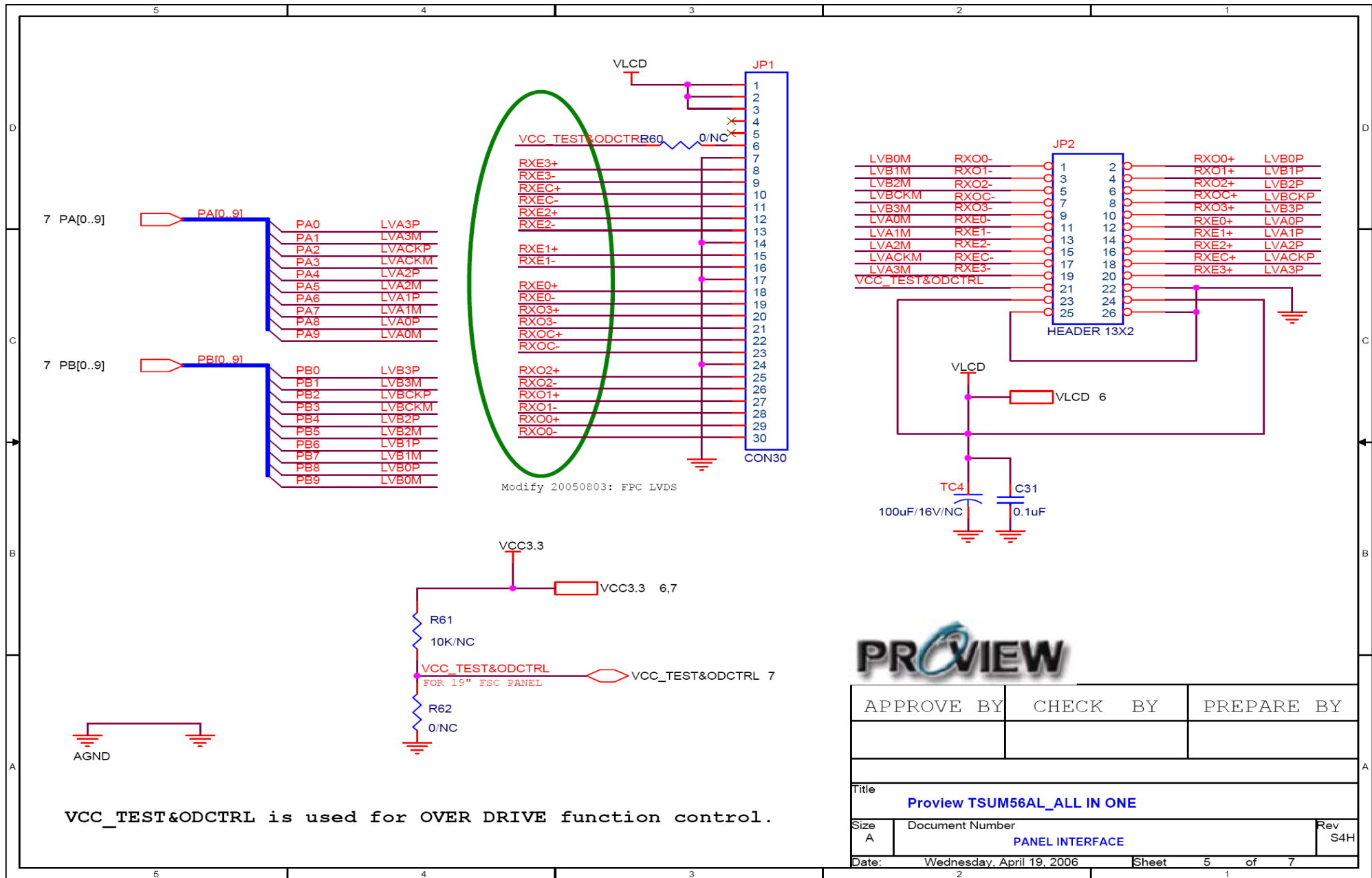
- 1.The first version 20050926
- 2.The second version 20051019
- 3.The third version 20051123
- 4.The forth version 20051130
- 5.The A version 20051208

PROVIEW

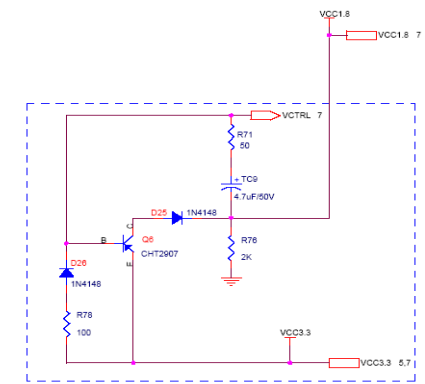
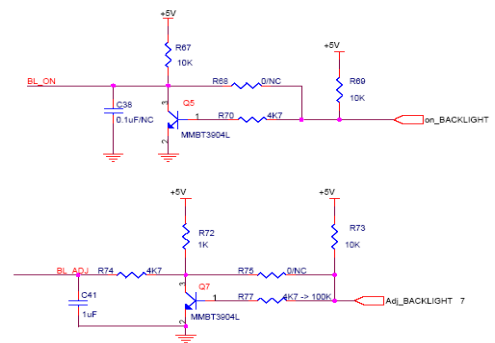
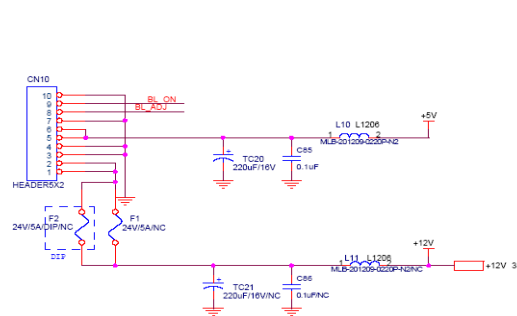
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Date: Wednesday, April 19, 2006 Sheet 2 of 7		



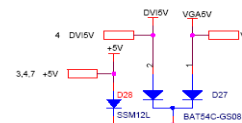
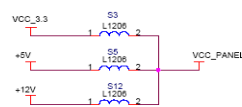
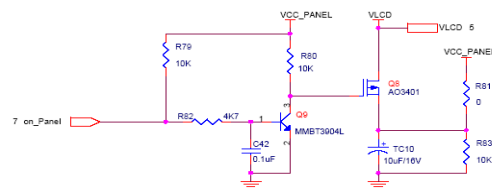
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Sheet 5 of 7		

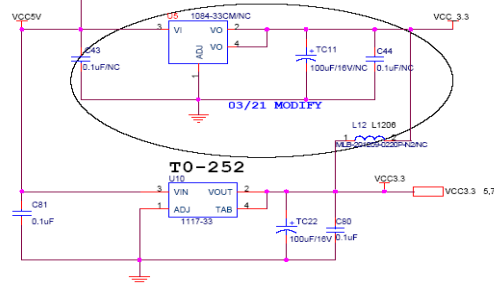


Recommend to used "Blue" parts circuit for VCC1.6V if you want to support DDC function when system power off



T0-263

For 18" 3.3V Panel



T0-252

For 18" 3.3V Panel

PROVIEW

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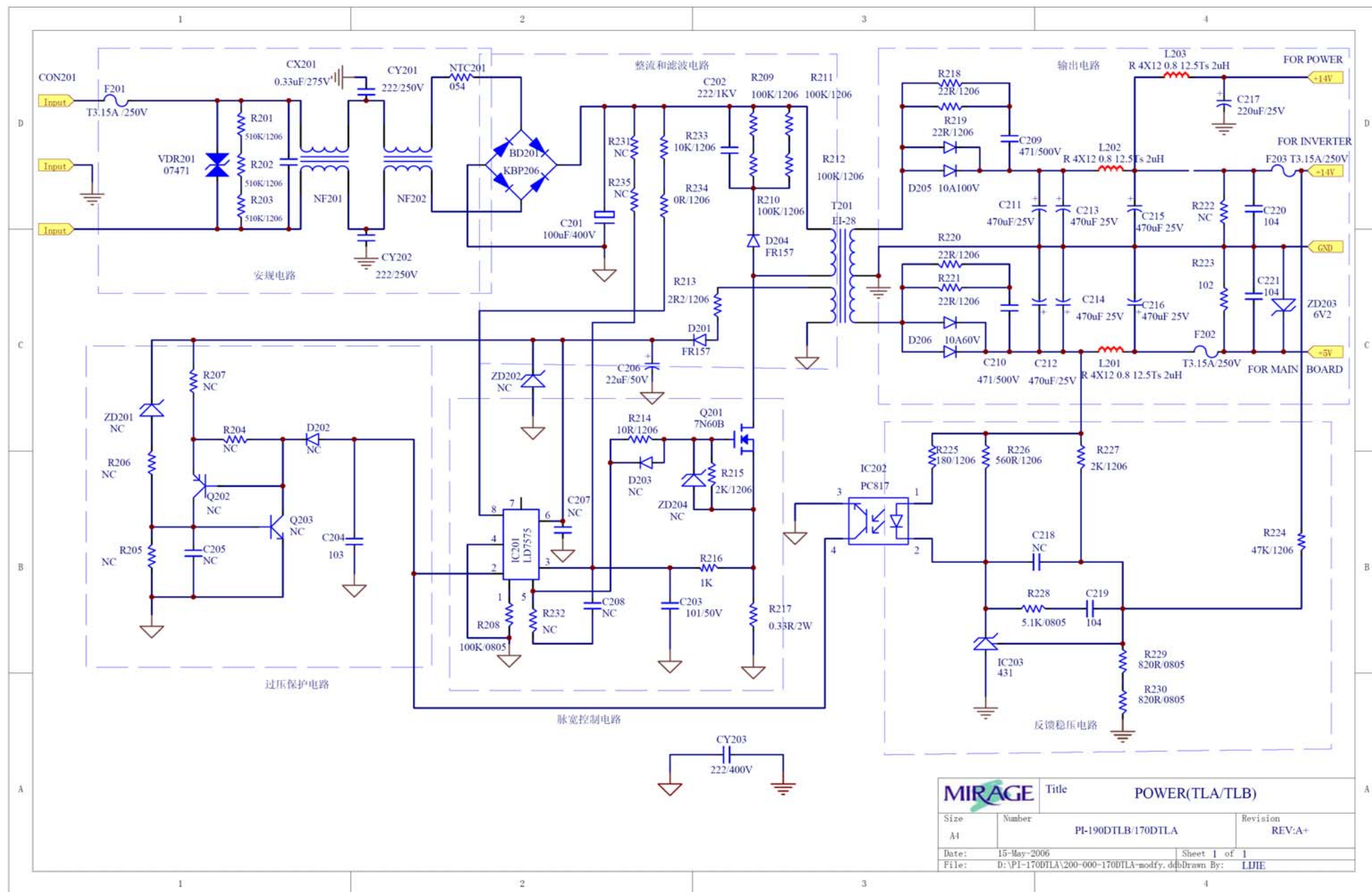
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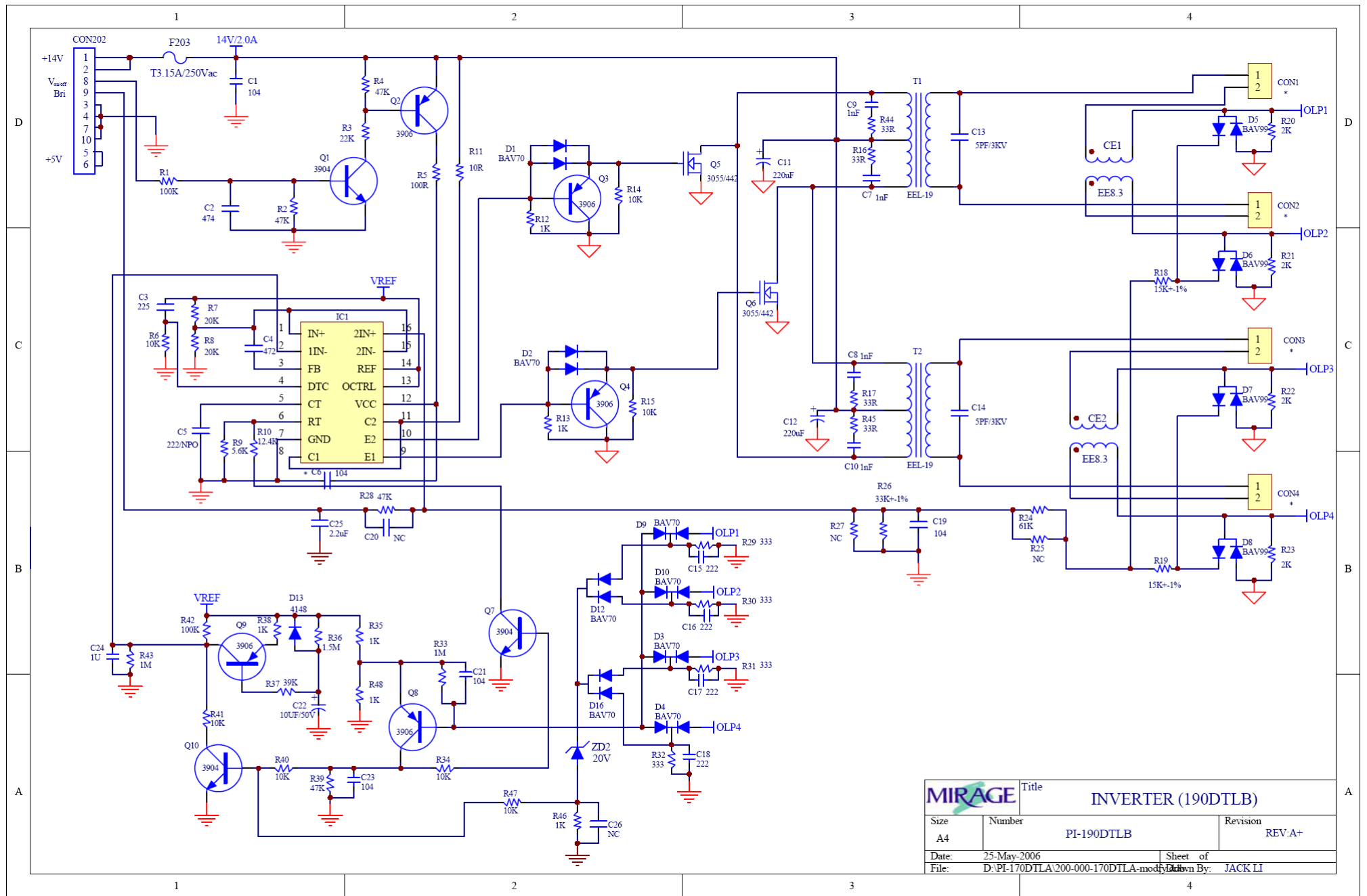
Size C Document Number POWER (DC TO DC)

Date Wednesday, April 19, 2006 Sheet 6 of 7 Rev 54H



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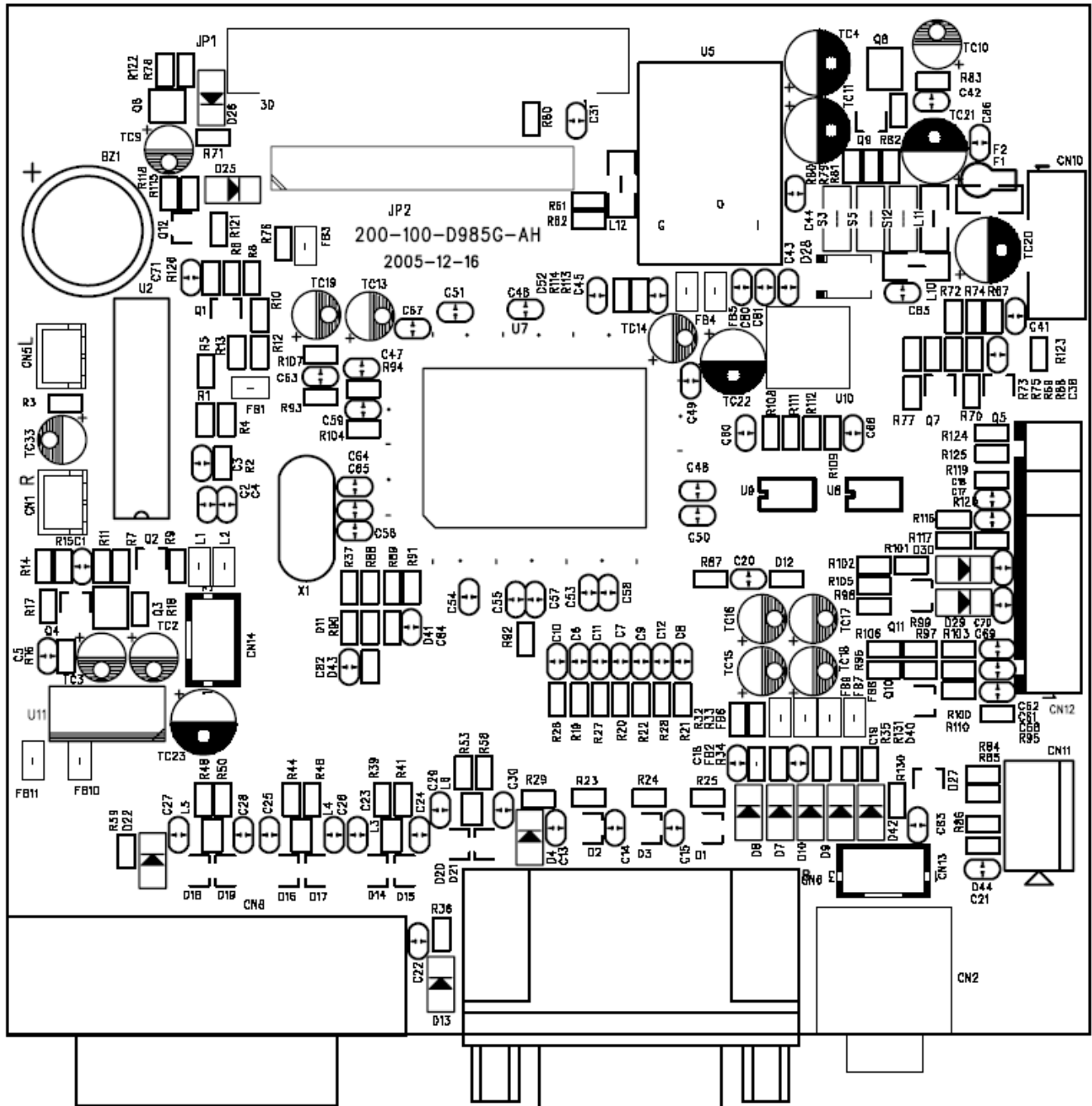




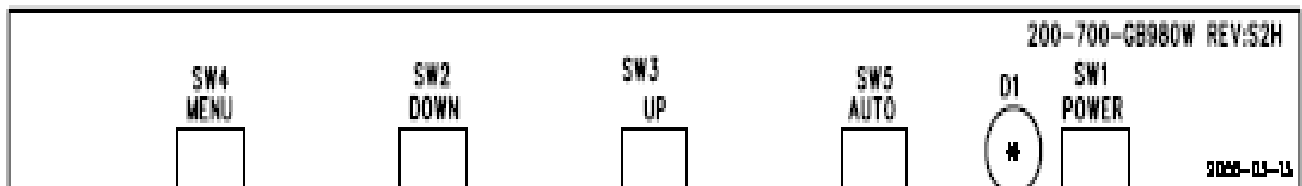
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Size	Number	Revision		REV:A+	
A4		PI-190DTLB			
Date:	25-May-2006	Sheet of			
File:	D:\PI-170DTLA\200-000-170DTLA-mod\PI-190DTLB	Drawn By:		JACK LI	

I. PCB LAYOUT DIAGRAM

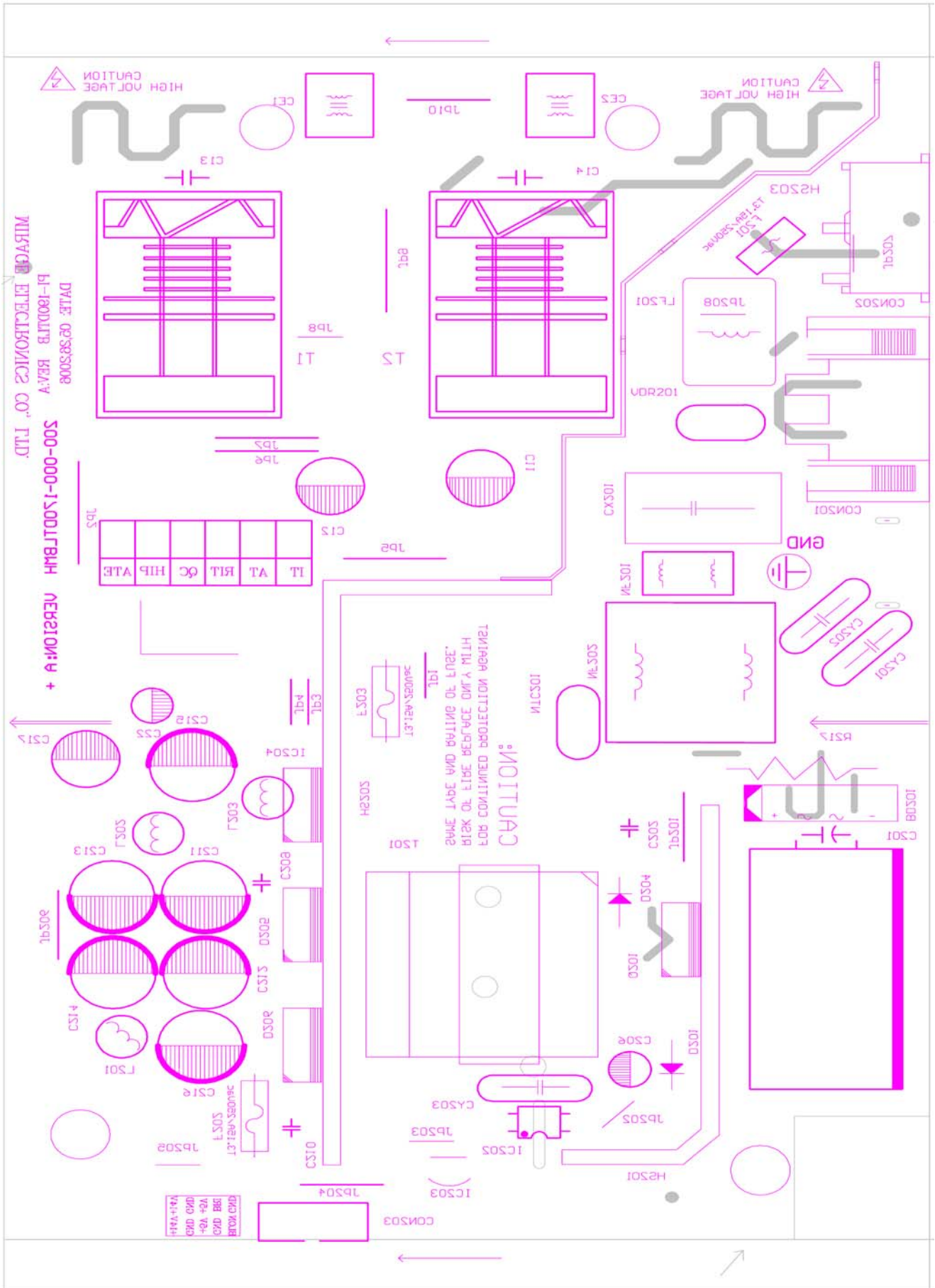
Main Board



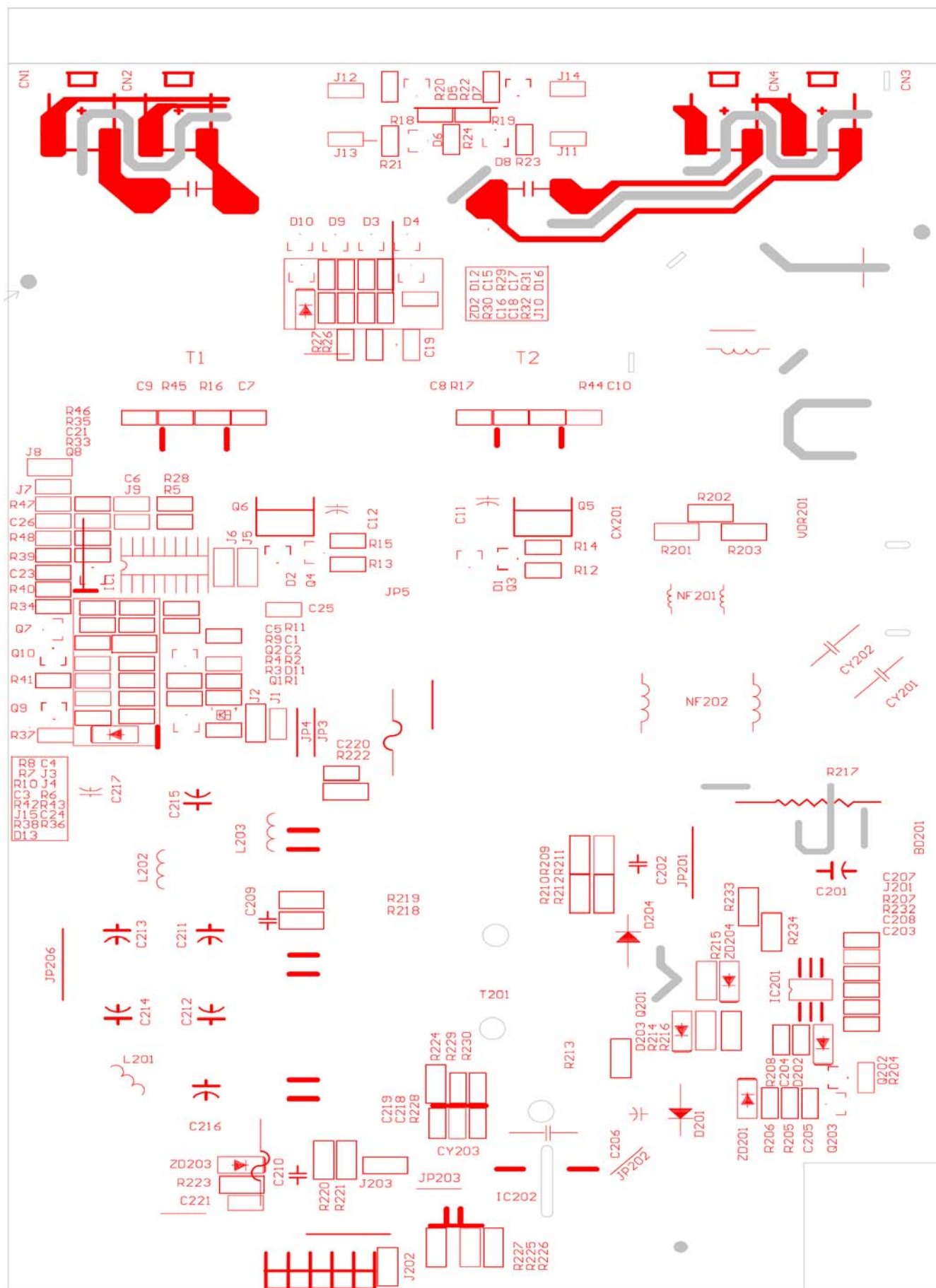
Control Board



Top layer



Bottom layer



MEMO
