

LG

COLOR MONITOR SERVICE MANUAL

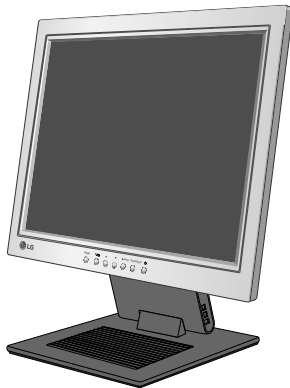
CHASSIS NO. : CL-35

FACTORY MODEL: LB504N

MODEL: FLATRON L1510P (LB504N-XL)

CAUTION

BEFORE SERVICING THE UNIT,
READ THE **SAFETY PRECAUTIONS** IN THIS MANUAL.



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SPECIFICATIONS

1. LCD CHARACTERISTICS

- Type : TFT XGA LCD Module
- Size : 352.0(H) x 263.5(V) x 14.0(T)
- Pixel Pitch : 0.297mm x 0.297mm
- Color Depth : 6Bits + FRC/ 16,194,277 colors
- Active Video Area : 15.0 inch
(304.128 x 228.096)
- Surface Treatment : Anti-Glare, Hard Coating (3H)
- Backlight Unit : Top/Bottom edge side 2CCFL
- Electrical Interface : LVDS Interface

2. OPTICAL CHARACTERISTICS

- 2-1. Viewing Angle by Contrast Ratio ≥ 10
 - Left : 55° min., 60° typ
 - Right : 55° min., 60° typ
 - Top : 40° min., 45° typ
 - Bottom : 40° min., 45° typ
- 2-2. Luminance : 200(min.), 250(typ.)
- 2-3. Contrast Ratio : 200(min.), 300(typ.)

3. SIGNAL (Refer to the Timing Chart)

- 3-1. Analog Video Input
 - 1) Video Input Range : 0~0.7V \pm 5%
 - 2) Video Termination Impedance : 75 Ω \pm 5%
 - 3) Sync Type : Separate TTL, Composite TTL
SOG(Sync On Green)
 - 4) Sync Level : TTL Low \leq 0.8V, High \geq 2.0V
- 3-2. Digital Video Input
DDWG DVI Standard 1.0
- 3-3. Operating Frequency
 - Horizontal : 31 ~ 63kHz
 - Vertical : 56 ~ 75Hz

4. POWER SUPPLY

- 4-1. Power
100~240V, 50/60Hz 0.6A
- 4-2. Power Consumption

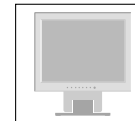
MODE	H/V SYNC	VIDEO	POWER CONSUMPTION	LED COLOR
POWER ON (NORMAL)	ON/ON	ACTIVE	less than 30 W	GREEN
STAND-BY	OFF/ON	OFF	less than 3 W	AMBER
SUSPEND	ON/OFF	OFF	less than 3 W	AMBER
DPMS OFF	OFF/OFF	OFF	less than 3 W	AMBER
POWER OFF			less than 3 W	OFF

5. ENVIRONMENT

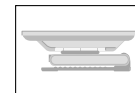
- 5-1. Operating Temperature: 10°C~35°C (50°F~95°F)
(Ambient)
- 5-2. Relative Humidity : 10%~80%
(Non-condensing)
- 5-3. MTBF : 40,000 Hours (Min.)
Lamp Life : 40,000 Hours (min.)

6. DIMENSIONS (with TILT/SWIVEL)

- Width : 356mm (14.01")
- Depth : 229mm (9.01")
- Height : 380mm (14.96")



- Width : 356mm (14.01")
- Depth : 291.4mm (11.47")
- Height : 103.3mm (4.06")




7. WEIGHT (with TILT/SWIVEL)

- Net. Weight : 5.0kg (11.02 lbs)
- Gross Weight : 6.6kg (14.55 lbs)

PRECAUTION

WARNING FOR THE SAFETY-RELATED COMPONENT.

- There are some special components used in LCD monitor that are important for safety. **These parts are marked  on the schematic diagram and the replacement parts list.** It is essential that these critical parts should be replaced with the manufacturer's specified parts to prevent electric shock, fire or other hazard.
- Do not modify original design without obtaining written permission from manufacturer or you will void the original parts and labor guarantee.

TAKE CARE DURING HANDLING THE LCD MODULE WITH BACKLIGHT UNIT.

- Must mount the module using mounting holes arranged in four corners.
- Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
- Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
- Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
- Make certain that treatment person's body are grounded through wrist band.
- Do not leave the module in high temperature and in areas of high humidity for a long time.
- The module not be exposed to the direct sunlight.
- Avoid contact with water as it may a short circuit within the module.
- If the surface of panel become dirty, please wipe it off with a softmaterial. (Cleaning with a dirty or rough cloth may damage the panel.)

WARNING

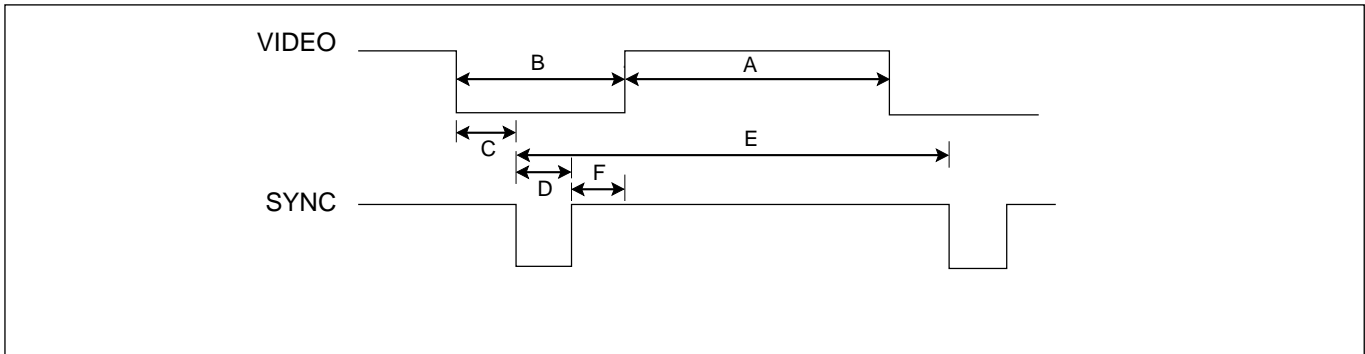
BE CAREFUL ELECTRIC SHOCK !

- If you want to replace with the new backlight (CCFL) or inverter circuit, must disconnect the AC adapter because high voltage appears at inverter circuit about 650Vrms.
- Handle with care wires or connectors of the inverter circuit. If the wires are pressed cause short and may burn or take fire.

CAUTION

Please use only a plastic screwdriver to protect yourself from shock hazard during service operation.

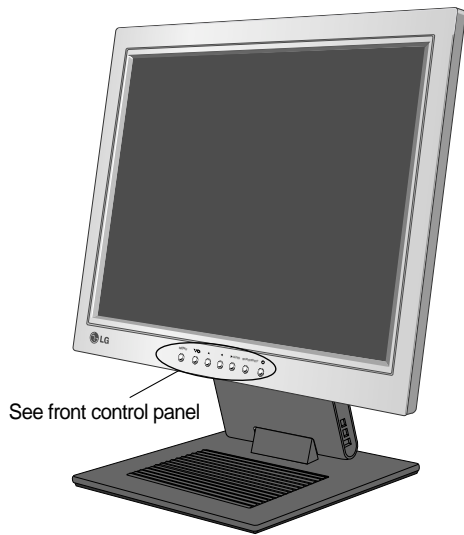
TIMING CHART



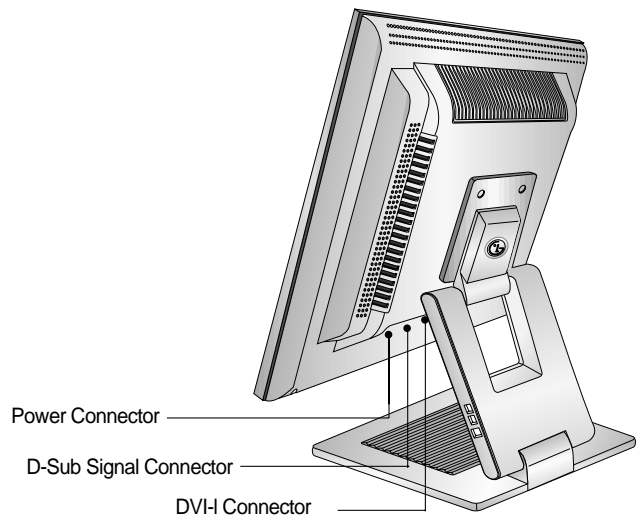
MODE	H / V	Sync Polarity	Dot Clock	Frequency	Total Period (E)	Video Active Time (A)	Blanking Time (B)	Sync Duration (D)	Back Porch (F)	Front Porch (C)	Resolution
1	H (Pixels)	+	25.175	31.468 KHz	800	640	160	96	48	16	640 x 350
	V (Lines)	-		70.0 Hz	449	350	99	2	60	37	
2	H (Pixels)	-	28.322	31.468 KHz	900	720	180	108	55	17	720 x 400 (TEXT)
	V (Lines)	+		70.0 Hz	449	400	49	2	34	13	
3	H (Pixels)	-	25.175	31.469 KHz	800	640	160	96	48	16	640 x 480
	V (Lines)	-		60.0 Hz	525	480	45	2	33	10	
4	H (Pixels)	-	30.24	35.0 KHz	864	640	224	64	96	64	640 x 480
	V (Lines)	-		66.67 Hz	525	480	45	3	39	3	
5	H (Pixels)	-	31.5	37.861 KHz	832	640	192	40	128	24	640 x 480
	V (Lines)	-		72.8 Hz	520	480	40	3	28	9	
6	H (Pixels)	-	31.5	37.50 KHz	840	640	200	64	120	16	640 x 480
	V (Lines)	-		75 Hz	500	480	20	3	16	1	
7	H (Pixels)	+	36.0	35.156KHz	1024	800	224	72	128	24	800 x 600
	V (Lines)	+		56.25 Hz	625	600	25	2	22	1	
8	H (Pixels)	+	40.0	37.879 KHz	1056	800	256	128	88	40	800 x 600
	V (Lines)	+		60.3 Hz	628	600	28	4	23	1	
9	H (Pixels)	+	50.0	48.077 KHz	1040	800	240	120	64	56	800 x 600
	V (Lines)	+		72.188 Hz	666	600	66	6	23	37	
10	H (Pixels)	+	49.5	46.875 KHz	1056	800	256	80	160	16	800 x 600
	V (Lines)	+		75.0 Hz	625	600	25	3	21	1	
11	H (Pixels)	-	57.2832	49.725 KHz	1152	832	320	64	224	32	832 x 624 (MAC)
	V (Lines)	-		74.55 Hz	667	624	43	3	39	1	
12	H (Pixels)	-	65	48.363 KHz	1344	1024	320	136	160	24	1024 x 768
	V (Lines)	-		60.0 Hz	806	768	38	6	29	3	
13	H (Pixels)	-	75	56.476 KHz	1328	1024	304	136	144	24	1024 x 768
	V (Lines)	-		70.0 Hz	806	768	38	6	29	3	
14	H (Pixels)	+	78.75	60.023 KHz	1312	1024	288	96	176	16	1024 x 768
	V (Lines)	+		75.0 Hz	800	768	32	3	28	1	

OPERATING INSTRUCTIONS

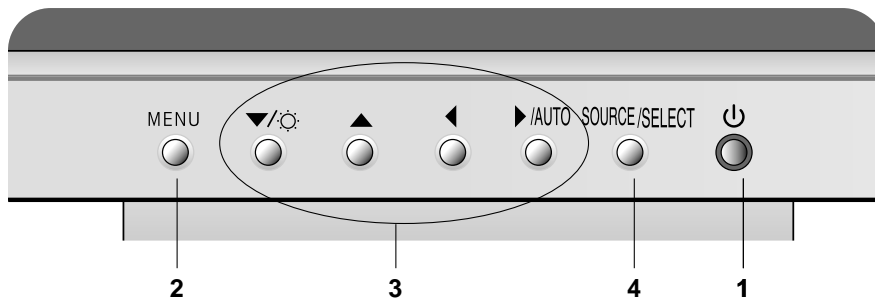
FRONT VIEW



REAR VIEW



Front Control Panel



1. Power Button

Use this button to turn the display on or off.

<Power (DPMS) Indicator>

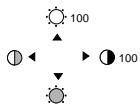
This Indicator lights up green when the display operates normally. If the display is in DPM (Energy Saving) mode, this indicator color changes to amber.

2. Menu Button

Use this button to enter or exit the On Screen Display.

3. ▲▼ Button

Use these buttons to choose or adjust items in the On Screen Display.



Bring up Contrast and Brightness adjustment.

4. ◀▶ Button

Use these buttons to choose or adjust items in the On Screen Display.



When adjusting your display settings, always press the ◀▶ button before entering the On Screen Display(OSD). This will automatically adjust your display image to the ideal settings for the current screen resolution size (display mode). The best display mode is **1024x768**.

5. SOURCE/SELECT Button

Use this button to enter a selection in the On Screen Display.

When selecting input signal, press Source/Select button before entering the OSD. This will change input(DVI-I/D-SUB select button). The Default setting is D-SUB.

6. Control Lock(Menu button, ► button)

Press the hold the MENU button and ► button for 3 seconds: the message “CONTROLS LOCKED” appears.



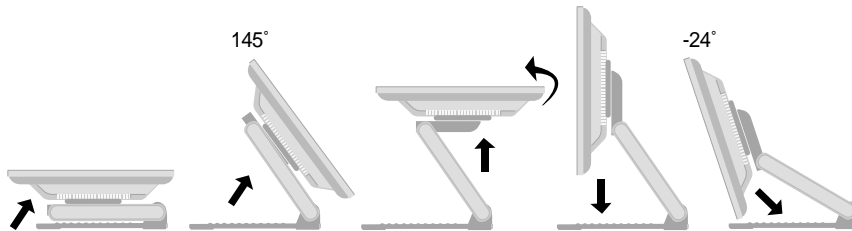
You can unlock the OSD controls at any time by pushing the MENU, ► button for 3 seconds: the message “CONTROLS UNLOCKED” will appear.



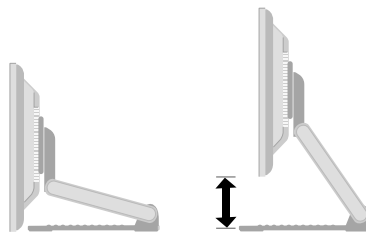
Positioning your display

Adjust the position of the panel in various ways for maximum comfort.

- Tilt Range : -24° ~ 145°



- Height Range : maximum 3.39inch (86.1mm)



- Landscape & Portrait : You can rotate the panel 90° clockwise.
(* For detailed information, please refer to the Pivot Software CD provided.)



Ergonomic

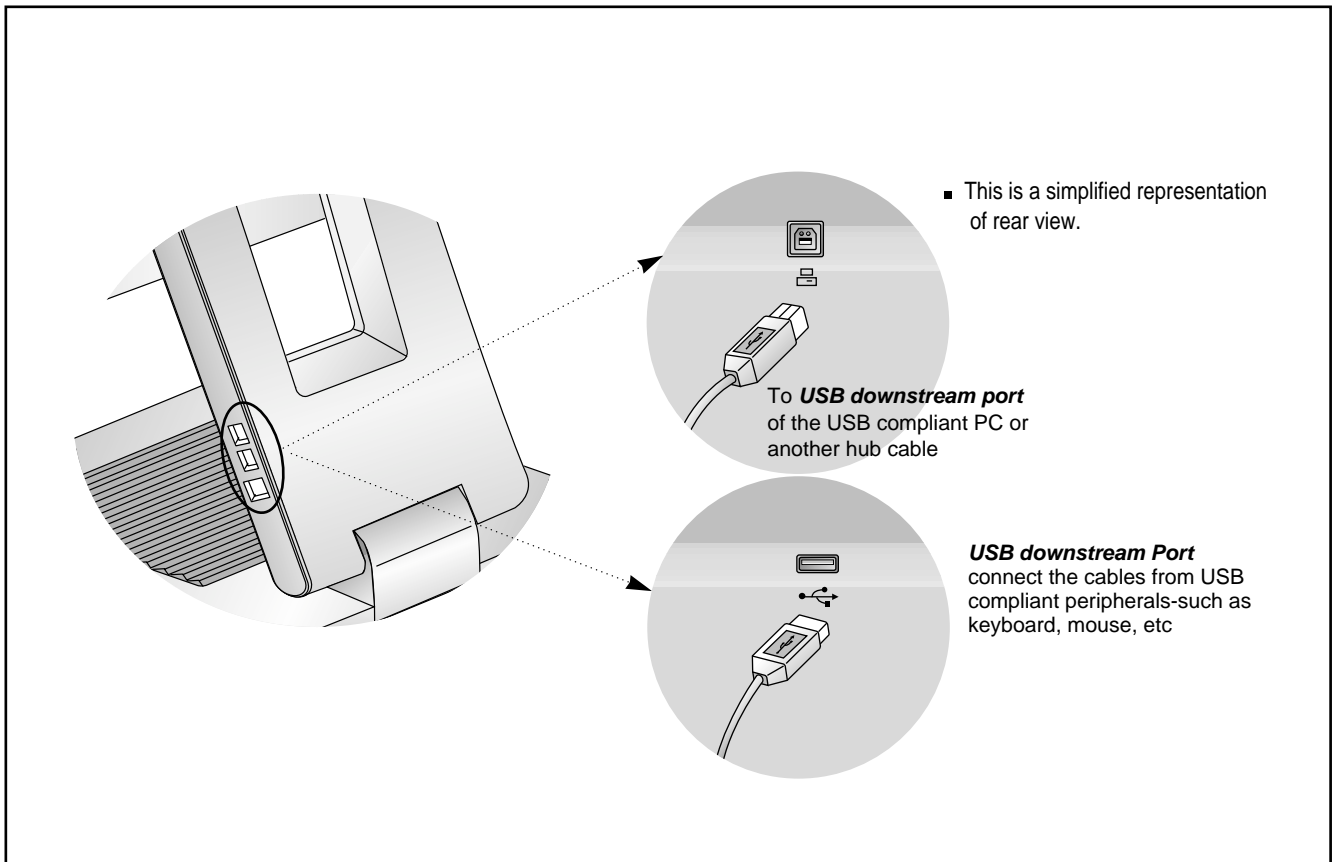
It is recommended that in order to maintain an ergonomic and comfortable viewing position, the forward tilt angle of the monitor should not exceed 5 degrees.

Making use of USB (Universal Serial Bus)*

USB (Universal Serial Bus) is an innovation in connecting your different desktop peripherals conveniently to your computer. By using the USB, you will be able to connect your mouse, keyboard, and other to your monitor instead of having to connect them to your computer. This will give you greater flexibility in setting up your system. USB allows you to connect chain up to 120 devices on a single USB port, and you can “hot” plug (attach them while the computer is running) or unplug them while maintaining Plug and Play auto detection and configuration. This monitor has an integrated BUS-powered USB hub, allowing up to 2 other USB devices to be attached it.

USB connection

1. Connect the upstream port of the Display to the downstream port of the USB compliant PC or another hub using the USB cable. (Computer must have a USB port)
2. Connect the USB compliant peripherals to the downstream ports of the monitor.

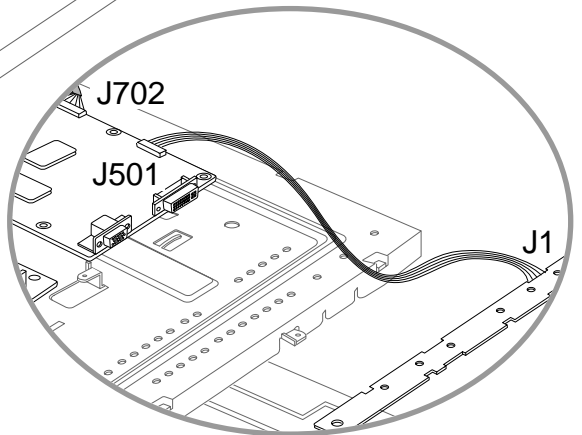
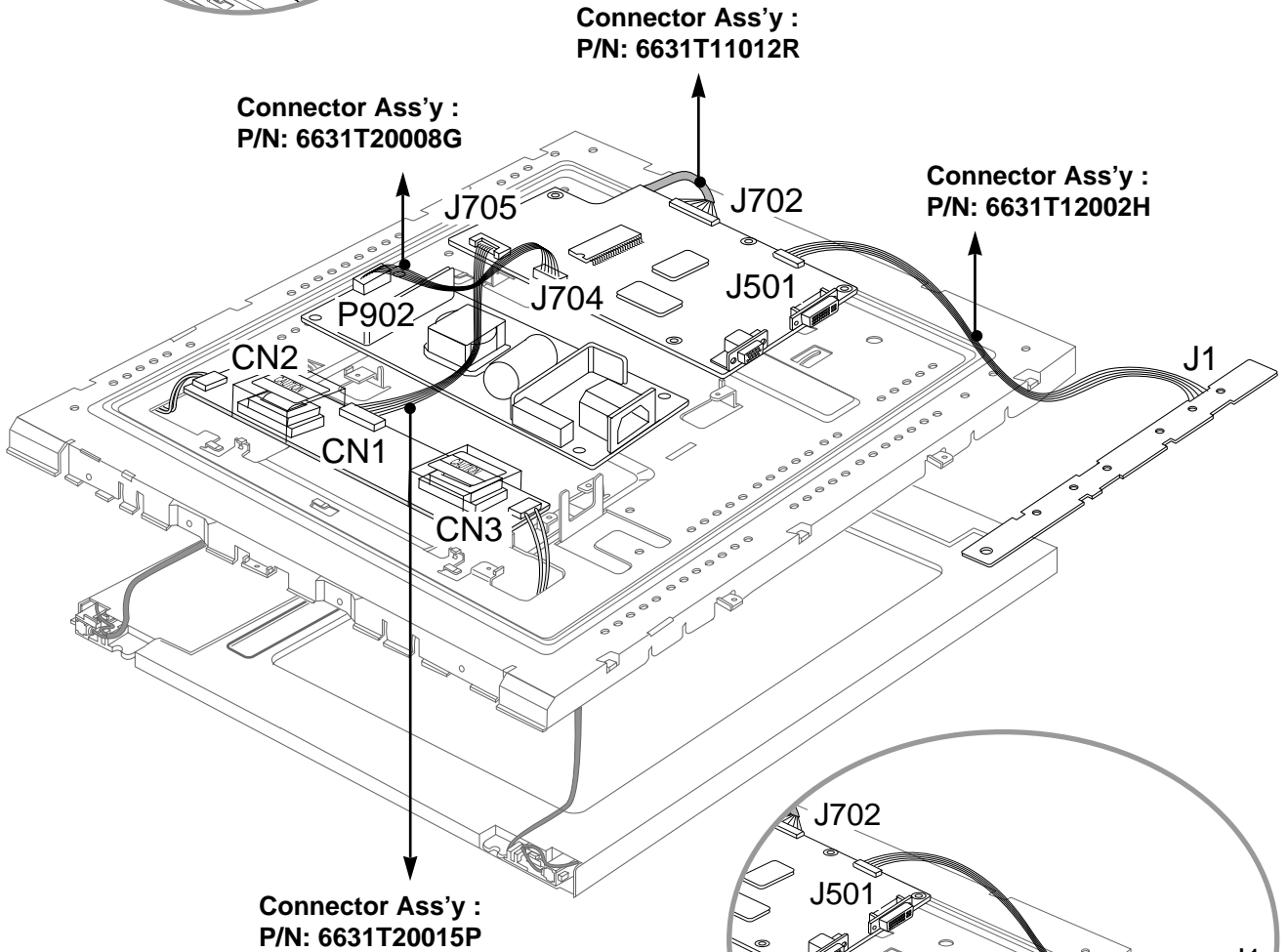
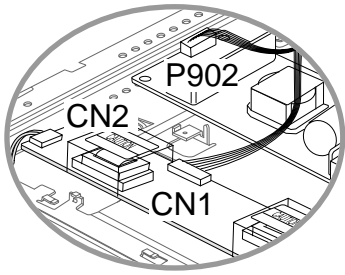


NOTE

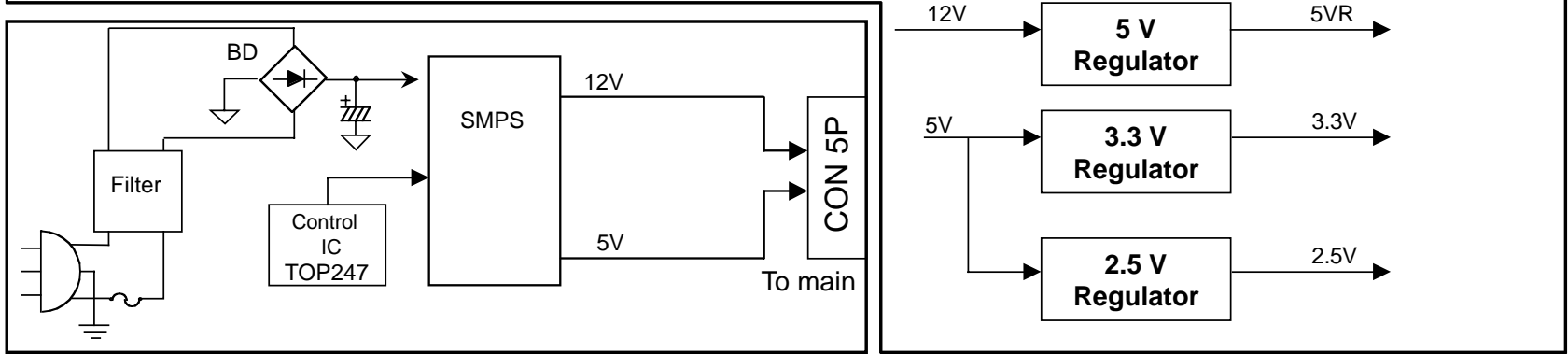
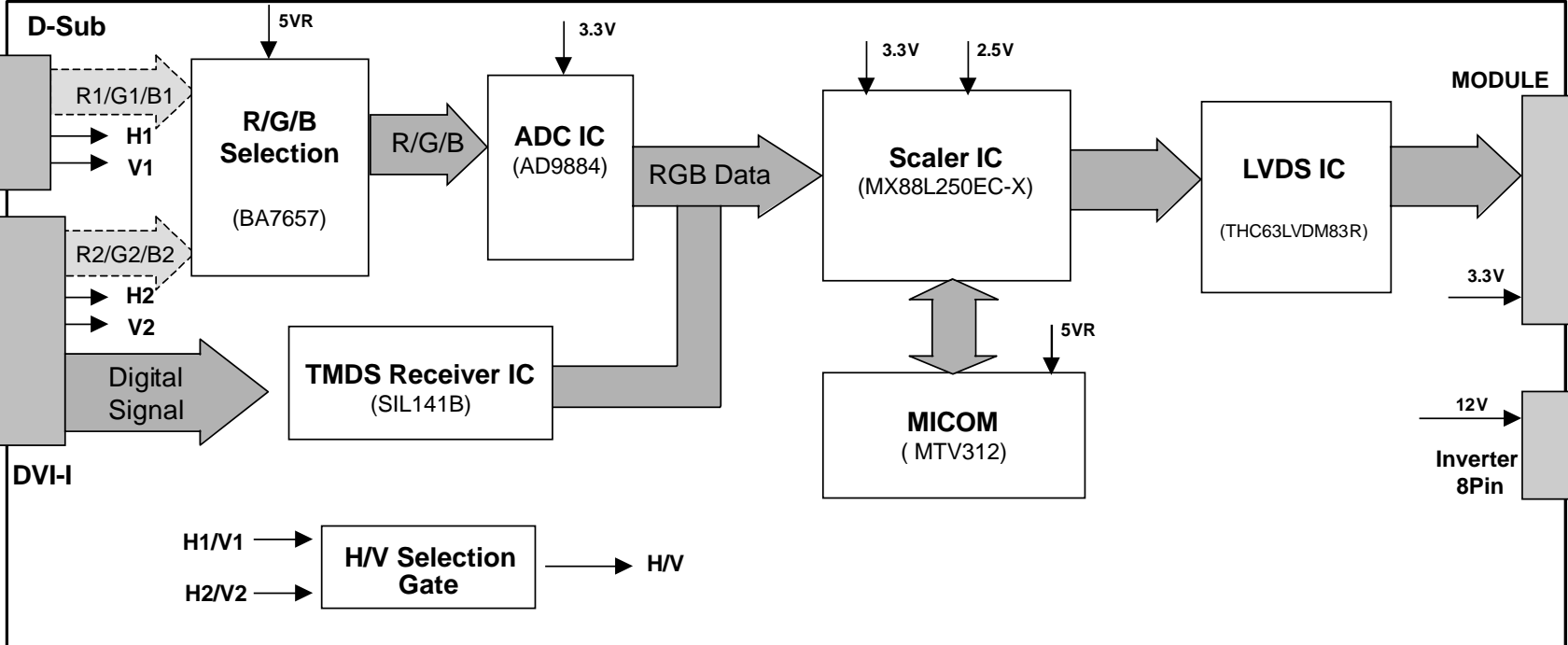
- To activate the USB hub function, the monitor must be connected to a USB compliant PC(OS) or another hub with the USB cable(enclosed).
- When connecting the USB cable, check that the shape of the connector at the cable side matches the shape at the connecting side.
- Even if the monitor is in a power saving mode, USB compliant devices will function when they are connected the USB ports(both the upstream and downstream) of the monitor.

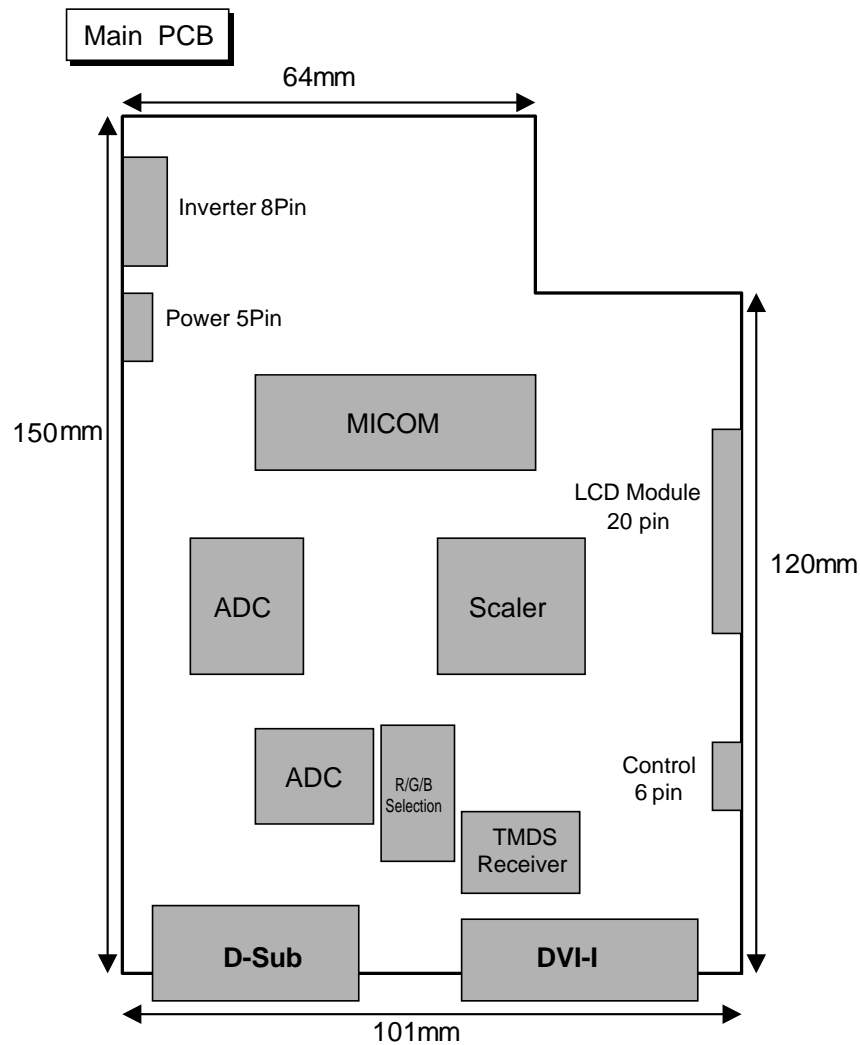
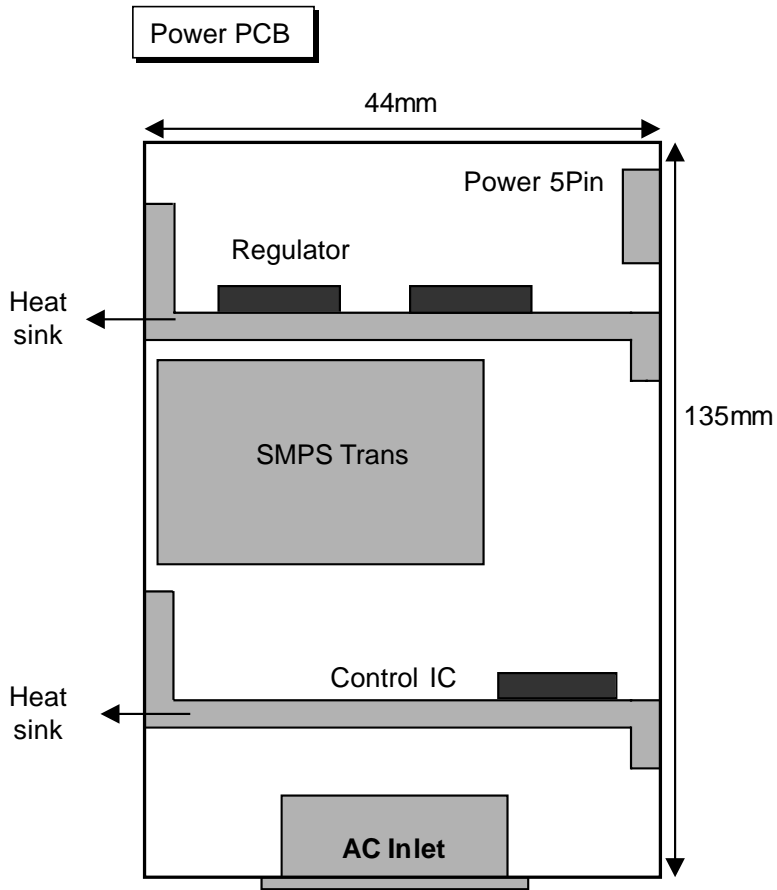
IMPORTANT: These USB connectors are not designed for use with high-power USB devices such as a video camera, scanner, etc. LGE recommends connecting high-power USB devices directly to the computer.

Connector the Main PCB Ass'y and Inverter.



Connector the Control PCB Ass'y and Main PCB Ass'y.





DESCRIPTION OF BLOCK DIAGRAM

1. Input signal switching part(BA7657).

There are two analog inputs which are analog and digital input.
They come from each 15 pin D-Sub and 24 pin DVI-I connector.

2. Video Controller Part.

This part amplifies the level of video signal for the digital conversion and converts from the analog video signal to the digital video signal using a pixel clock.

The pixel clock for each mode is generated by the PLL.

The range of the pixel clock is from 25MHz to 80MHz.

This part consists of the Scaler, ADC and TMDS receiver .

The Scaler gets the video signal converted analog to digital, interpolates input to 1024 X 768 resolution signal and outputs 8-bit R, G, B signal to transmitter.

3. Display Data Transmitter Part(LVDS).

This part transmit digital signal from the Scaler to the receiver of module.

4. Power Part.

This part consists of the one 5V, two 3.3V, and one 2.5V regulators to convert power which is provided 12V, 5V in Power board.

3.3V is provided for LCD panel and inverter, 5V is provided for micom and analog selection(BA7657).

Also, 5V is converted 3.3V and 2.5V by regulator. Converted power is provided for IC in the main board.

5. MICOM Part.

This part consists of EEPROM IC which stores control data, Reset IC and the Micom.

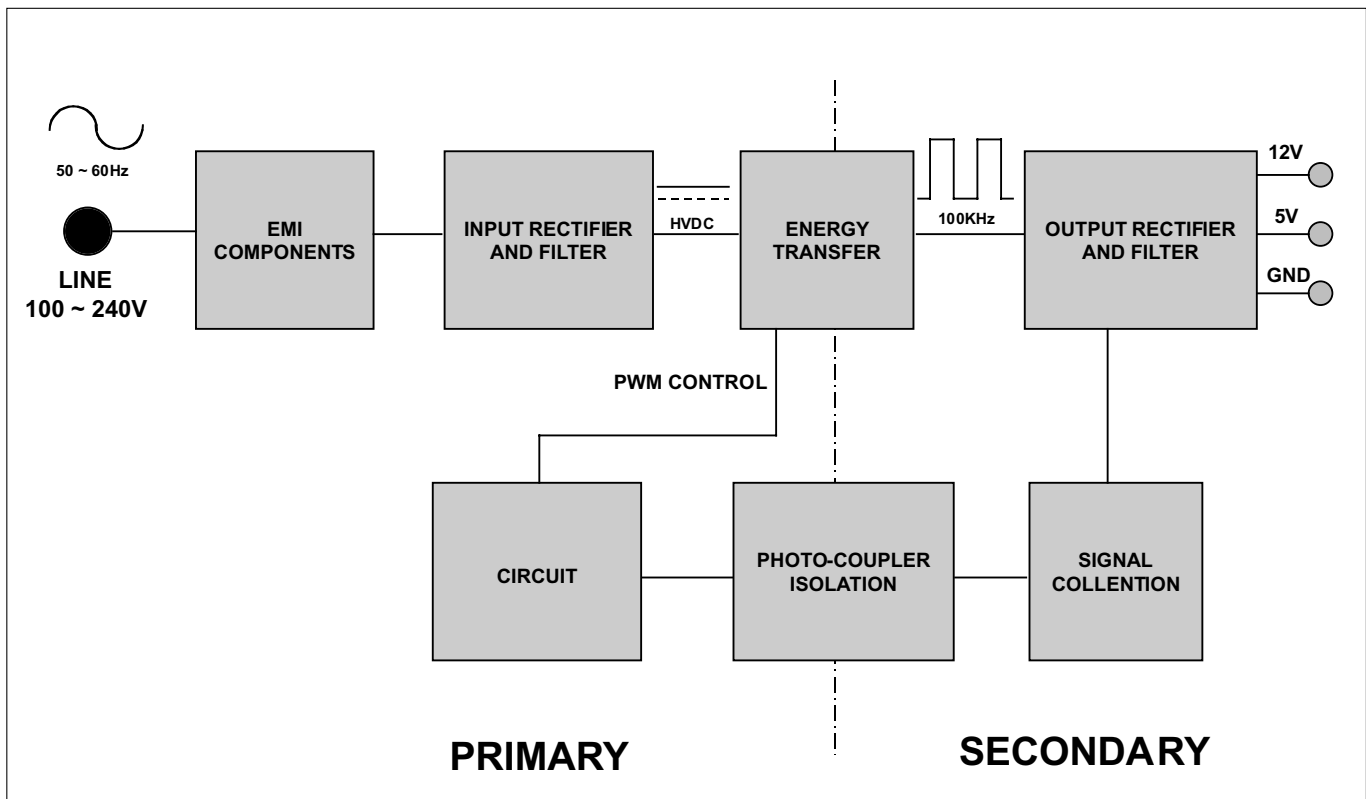
The Micom distinguishes polarity and frequency of the H/V sync are supplied from signal cable.

The controlled data of each modes is stored in EEPROM.

6. Inverter

The inverter converts from DC12V to AC 700Vrms and operate back-light lamp of module.

POWER BLOCK DIAGRAM



DESCRIPTION OF BLOCK DIAGRAM

1. EMI components.

This part contains of EMI components to comply with global marketing EMI standards like FCC, VCCI CISPR, the circuit included a line-filter, across line capacitor and of course the primary protection fuse.

2. Input rectifier and filter.

This part function is for transfer the input AC voltage to a DC voltage through a bridge rectifier and a bulk capacitor.

3. Energy Transfer.

This part function is transfer the primary energy to secondary through a power transformer.

4. Output rectifier and filter.

This part function is to make a pulse width modulation control and to provide the driver signal to power switch, to adjust the duty cycle during different AC input and output loading condition to achive the dc output stablize, and also the over power protection is also monitor by this part.

5. Photo-Coupler isolation.

This part function is to feed back the dc output changing status through a photo transistor to primary controller to achive the stablized dc output voltage.

6. Signal collection.

This part function is to collect the any change from the dc output and feed back to the primary through photo transistor

ADJUSTMENT

All adjustment are thoroughly checked and corrected when the monitor leaves the factory, but sometimes several minor adjustment may be required.

Adjustment should be following procedure and after warming up for a minimum of 10 minutes.

Alignment appliances and tools.

- IBM Compatible PC
- Programmable Signal Generator.
(eg. VG-819 made by Astrodesign Co.)
- E(E)PROM with each mode data saved.
- Alignment Adapter and Software.

1. Adjustment for Factory Preset Mode

- 1) Run alignment program for LB504N on the IBM compatible PC.
- 2) Select EEPROM All Init. command and Enter.
- 3) Display cross hatch pattern at Mode 1.
- 4) Select EDID WRITE command and Enter.

2. Adjustment for White Balance

- 1) Display color 0,0 pattern at Mode 13.
- 2) Set External Bright to MAX position and Contrast to MAX Position.
- 3) Select PRESET START → BIAS CAL command and Enter.
- 4) No attempt to manually adjust, BIAS data is automatically adjusted and saved to the EEPROM.
- 5) Display color 15,0 pattern at Mode 13.
- 6) Select DRIVE CAL command and Enter.
- 7) Color 1 (9300K) and Color 2 (6500K) are automatically adjusted and saved to the EEPROM.
- 8) Select PRESET EXIT command and Enter.

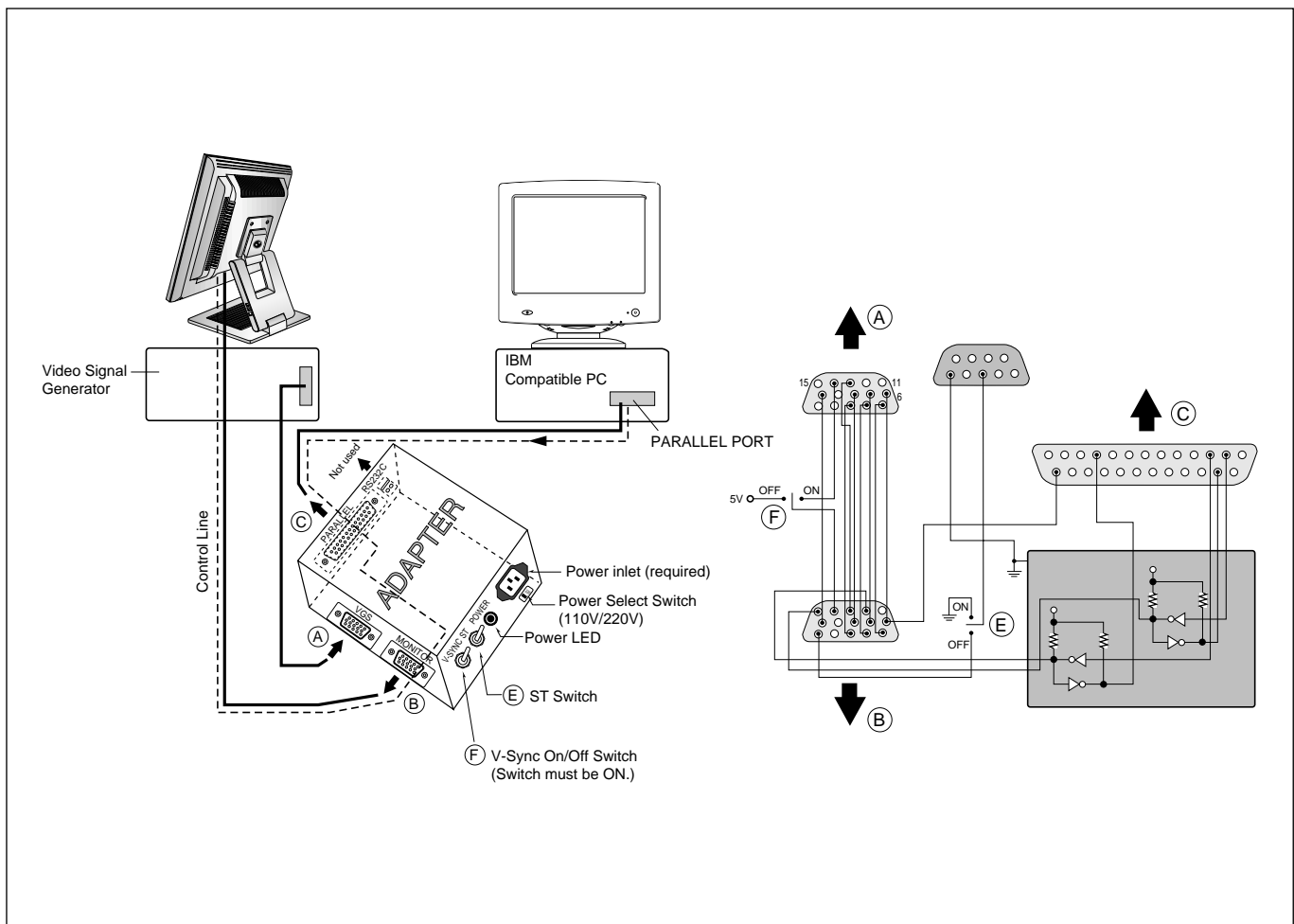
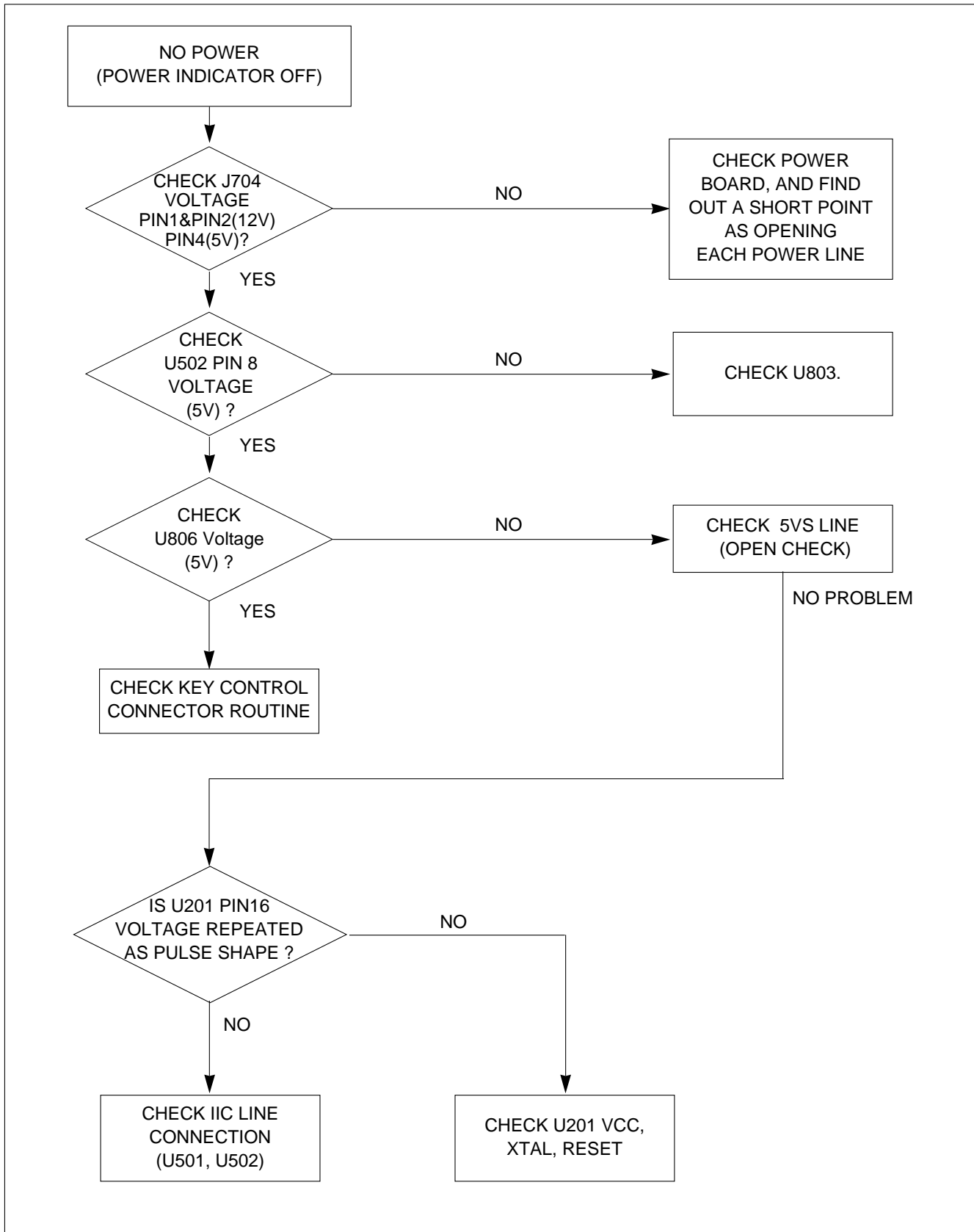


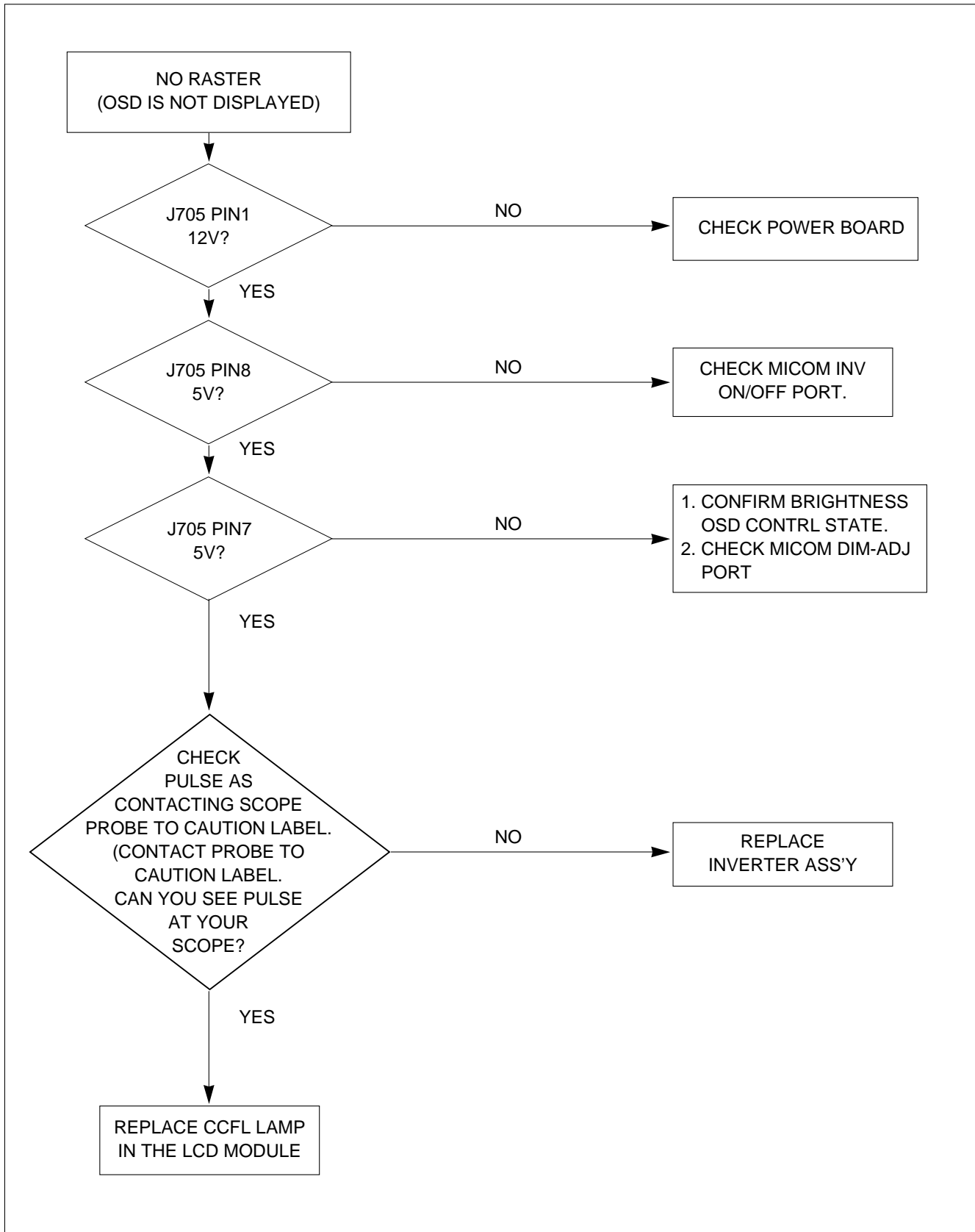
Figure 1. Cable Connection

TROUBLESHOOTING GUIDE

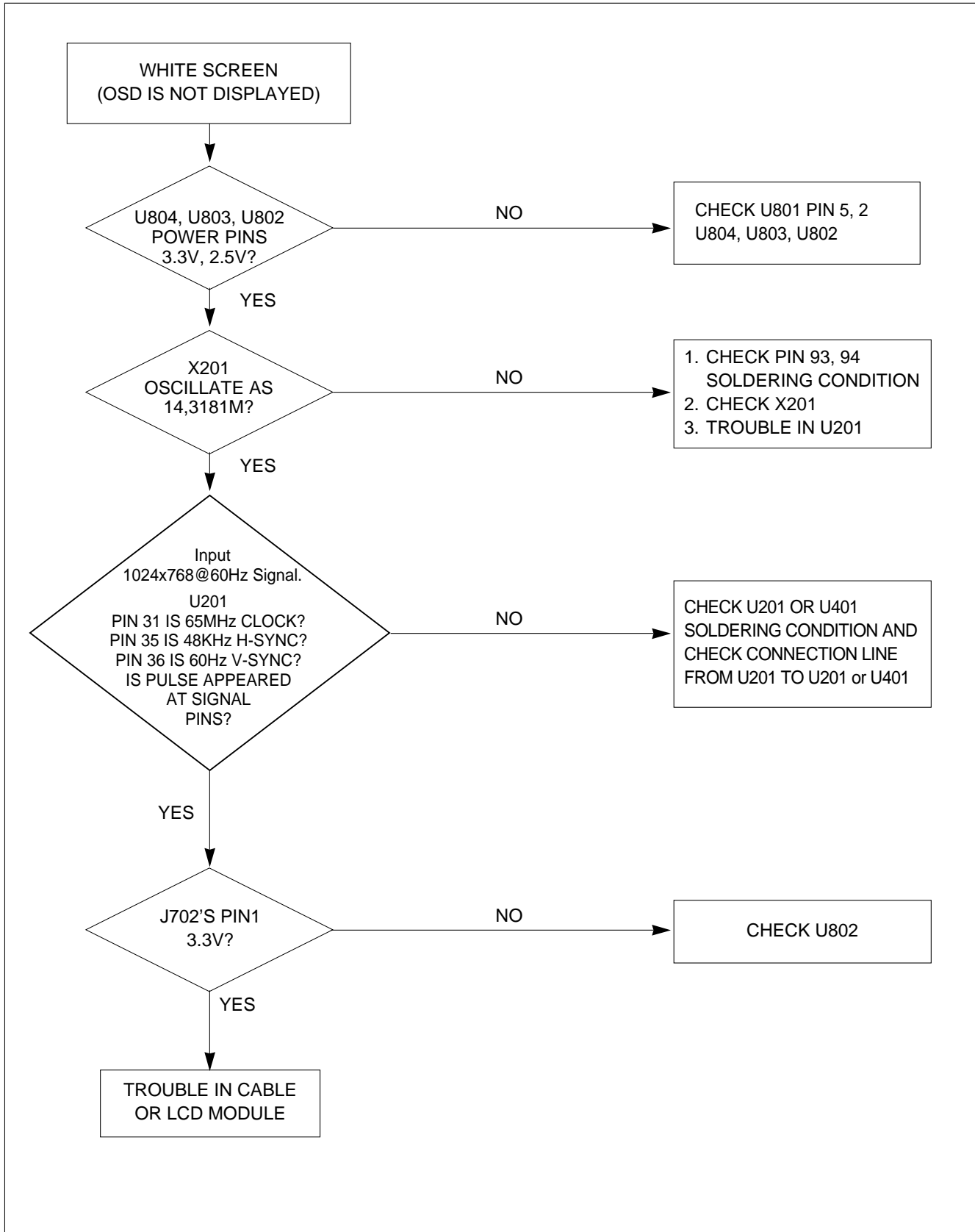
1. NO POWER



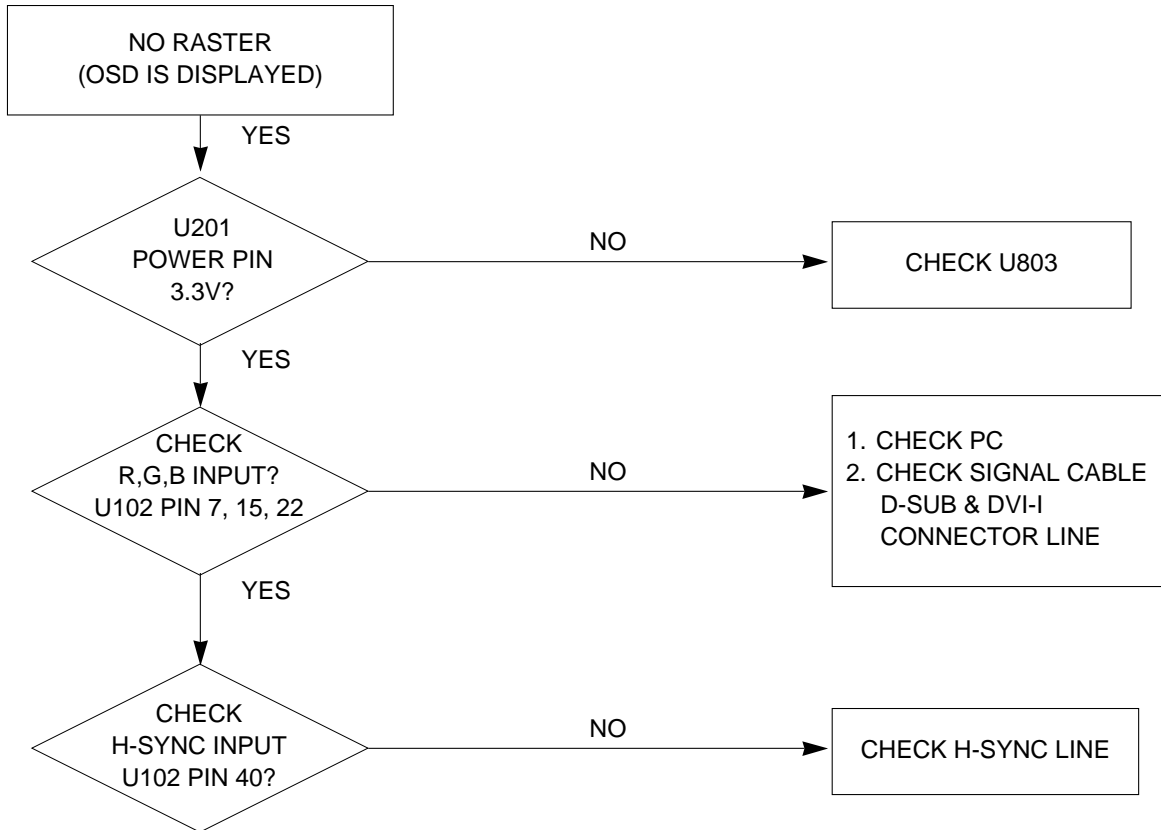
2. NO RASTER (OSD IS NOT DISPLAYED) – INVERTER



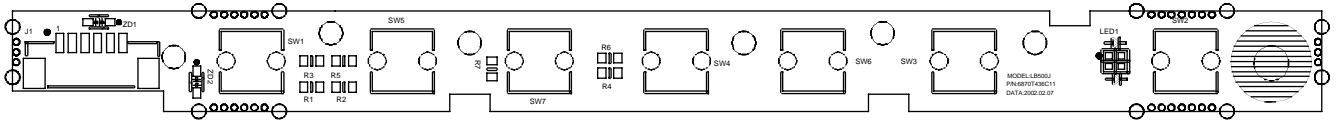
3. WHITE SCREEN (OSD IS NOT DISPLAYED)



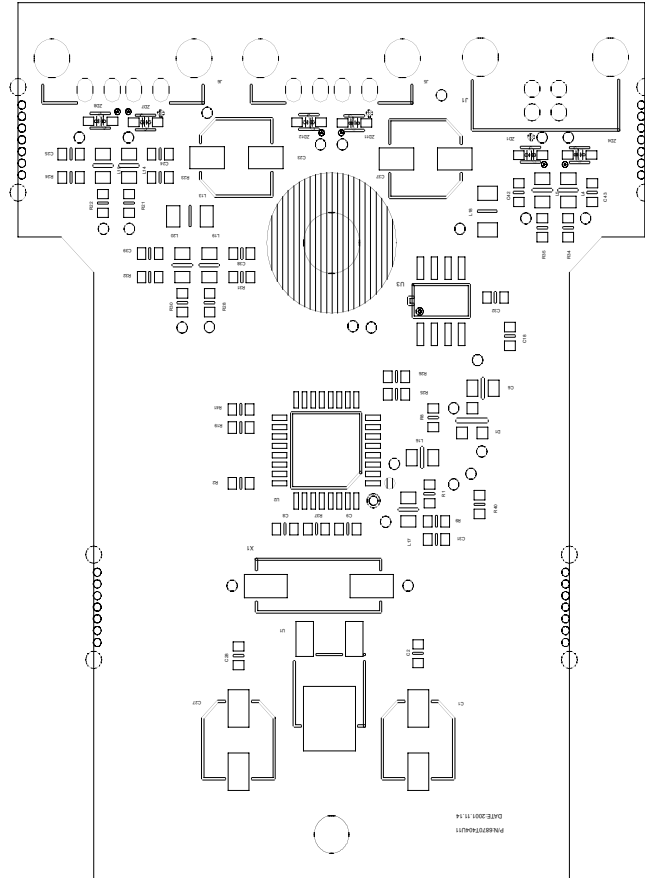
4. NO RASTER (OSD IS DISPLAYED) – MX88L295EC



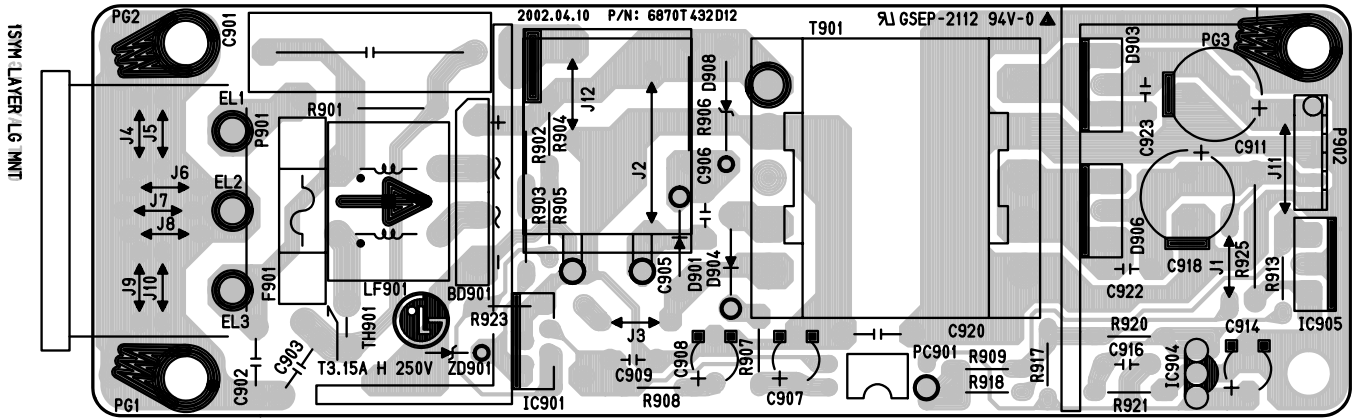
2. CONTROL BOARD



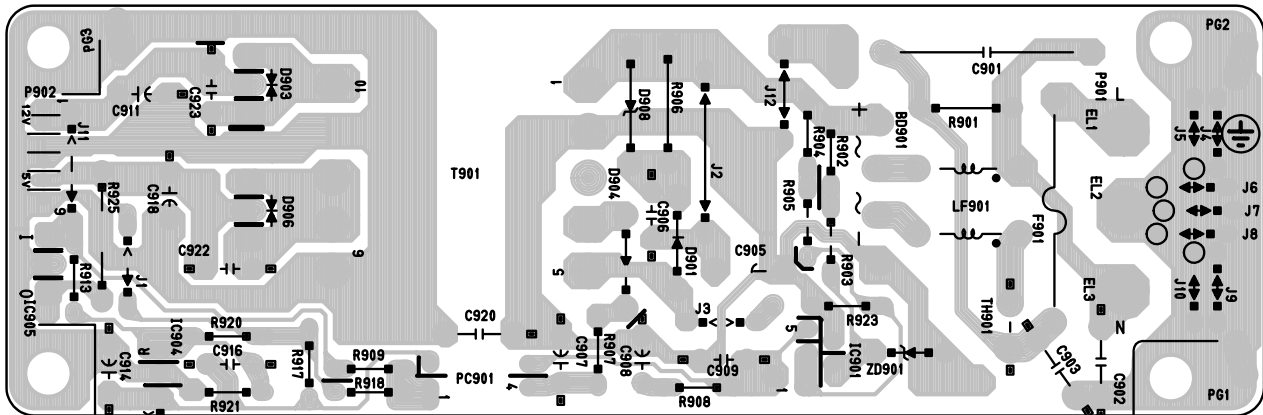
3. USB BOARD



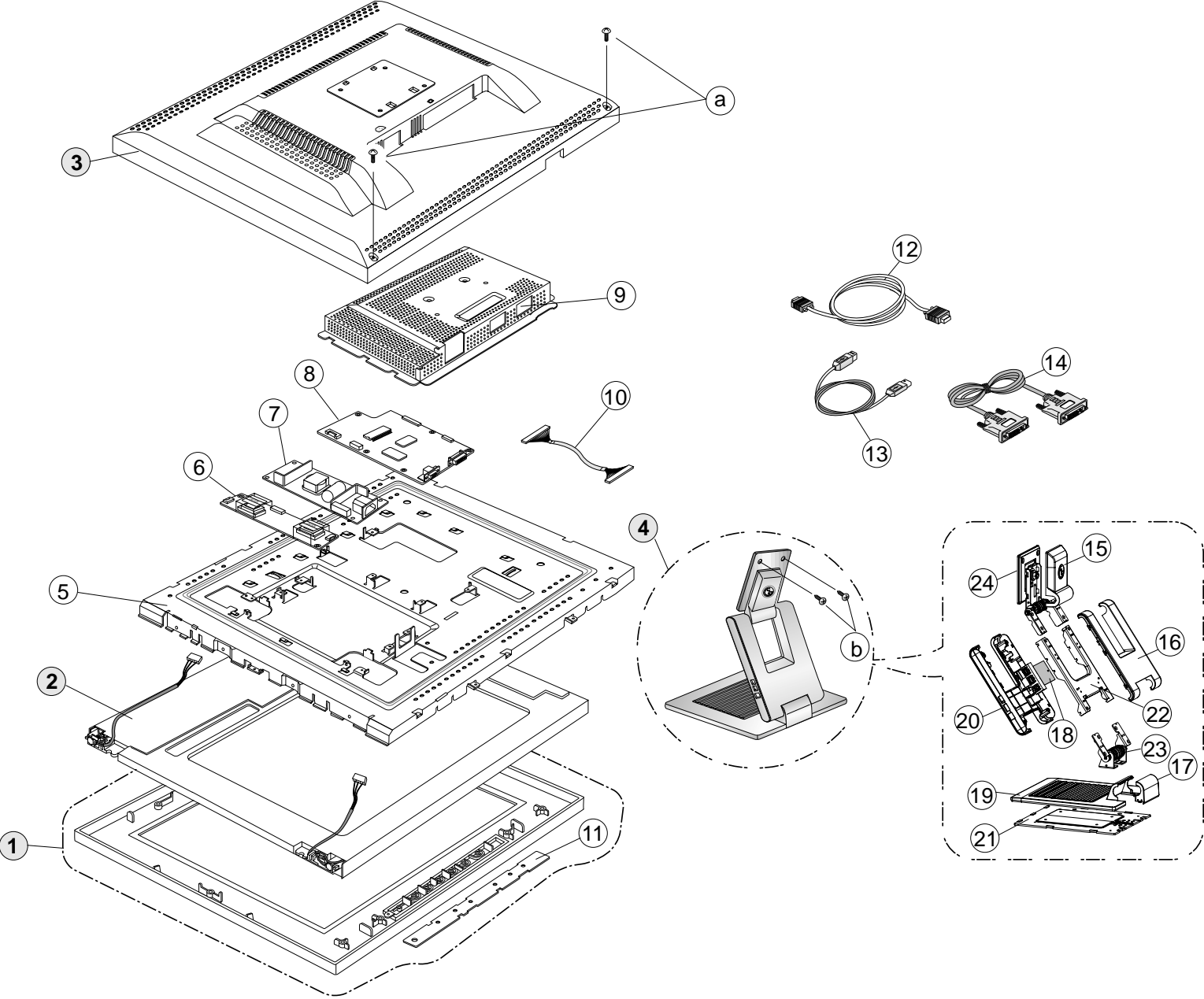
4. POWER BOARD (Component Side)



5. POWER BOARD (Solder Side)



EXPLODED VIEW




EXPLODED VIEW PARTS LIST

Note:  SAFETY Mark

Ref. No.	Part No.	Description
1	3091TKL039R	CABINET ASSEMBLY, LB504N BRAND 3090TKL038A DOMESTIC
2	6304FLP025A	LCD(LIQUID CRYSTAL DISPLAY), LM150X06-A3 LG PHILIPS TFT COLOR 15.0 INCH
3	3809TKL026H	BACK COVER ASSEMBLY, LB504N 3808TKL029 .
4	3043TKK095A	TILT SWIVEL ASSEMBLY , LB504J . PIVOT&2-HINGE
5	4951TKS085J	METAL ASSEMBLY, FRAME MAIN(LB504N)
6	6633TZA003H or 6632Z-1507C	 INVERTER ASSEMBLY, SAMSUNG LG1510 LG56AH  INVERTER ASSEMBLY, NMC 1507 15.1 12V (CHOI JEONG GYU)
7	6871TPT223C	PWB(PCB) ASSEMBLY, POWER, LB500J POWER TOTAL BRAND CL-32
8	3313TL5053A	MAIN TOTAL ASSEMBLY, LB504N BRAND CL-35
9	4950TKK424F	METAL, SHIELD REAR(LB504N)
10	6631T11012R	CONNECTOR ASSEMBLY, 20P H-H 140MM UL20276 UNIXTAR LB500J
11	6871TST315A	PWB(PCB) ASSEMBLY, SUB, LB504J CONTROL TOTAL BRAND CL-35
12	6850TD9001A	CABLE, D-SUB, UL 2990-9C(7.5) DT 1870MM GRAY(85964) BRAND DM
13	6866TDU002D	CABLE, D-SUB, UL20276SB10P+2C AWG#30 DT 1870MM GRAY(85964) BRAND DM
14	6866TDV004H	CABLE, DVI, UL20276 DT 2000MM GRAY(85964) LB886F DM
15	3550TKK264A	COVER, LB504J HINGE ROTATE
16	3550TKK266A	COVER, LB504J STAND REAR
17	3550TKK268A	COVER, LB504J HINGE BASE
18	6871TUT015A	PWB(PCB) ASSEMBLY, USB, LB886F SUB TOTAL BRAND CL-29
19	3550TKK267A	COVER, LB504J BASE TOP
20	3550TKK265A	COVER, LB504J STAND FRONT WITH USB
21	4950TKK444A	METAL BASE LB504J
22	4950TKK443A	METAL STAND LB504J
23	4951TKK089A	METAL ASSEMBLY, TILT UNIT BASE HINGE
24	4951TKK088A	METAL ASSEMBLY, TILT UNIT PORTRAIT & UPPER HINGE
a	332-068U	SCREW, PPB+3*8 (MSWR/FZMW1)
b	332-105H	SCREW, DRAWING, D4.0 L12.0 MSWR/BK

REPLACEMENT PARTS LIST

CAUTION: BEFORE REPLACING ANY OF THESE COMPONENTS,
 READ CAREFULLY THE **SAFETY PRECAUTIONS** IN THIS MANUAL.

* NOTE : **S** SAFETY Mark 
AL ALTERNATIVE PARTS

DATE: 2002. 6. 17.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
MAIN BOARD				
CAPACITORS				
		C101	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C102	OCC100CK41A	10PF 1608 50V 5% R/TP NP0
		C103	DCH7476C621	47UF 6.3V M 3528 TP(-)
		C104	DCH7476C621	47UF 6.3V M 3528 TP(-)
		C105	DCH7476C621	47UF 6.3V M 3528 TP(-)
		C106	DCH7476C621	47UF 6.3V M 3528 TP(-)
		C107	DCH7476C621	47UF 6.3V M 3528 TP(-)
		C108	DCH7476C621	47UF 6.3V M 3528 TP(-)
		C109	OCK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
		C110	OCH8226F611	22UF 16V M 85STD(CYL) R/TP
		C111	OCH8226F611	22UF 16V M 85STD(CYL) R/TP
		C112	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C113	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C114	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C115	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C116	OCK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
		C117	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C118	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C119	OCK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
		C120	OCK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
		C121	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C122	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C123	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C124	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C125	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C126	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C127	OCK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
		C128	OCK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
		C129	OCC471CK41A	470PF 1608 50V 5% R/TP NP0
		C130	OCH8107F611	100UF 16V M 85STD(CYL) R/TP
		C131	OCK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
		C132	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C133	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C134	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C135	OCC102CK41A	1000PF 1608 50V 5% R/TP NP0
		C136	OCH8106F611	10UF 16V M 85STD(CYL) R/TP
		C137	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C138	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C139	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C140	OCC100CK41A	10PF 1608 50V 5% R/TP NP0
		C141	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C142	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C143	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C144	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C146	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C147	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C148	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C149	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C150	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C151	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C153	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C154	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R

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			C175	0CH3105F946	1UF 16V Z F 2012 R/TP
			C177	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C181	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C188	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
			C189	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C190	OCK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
			C191	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C192	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C193	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C194	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C195	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C196	OCH8107F611	100UF 16V M 85STD(CYL) R/TP
			C225	OCC680CK41A	68PF 1608 50V 5% R/TP NP0
			C226	OCC680CK41A	68PF 1608 50V 5% R/TP NP0
			C227	OCC680CK41A	68PF 1608 50V 5% R/TP NP0
			C228	OCC150CK41A	15PF 1608 50V 5% R/TP NP0
			C229	OCC150CK41A	15PF 1608 50V 5% R/TP NP0
			C230	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
			C231	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C232	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C233	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C234	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C235	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C236	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
			C238	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C239	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C240	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C241	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C242	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C243	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C244	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C401	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C402	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C403	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C404	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C405	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C501	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
			C502	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C503	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
			C504	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C505	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C506	OCC180CK41A	18PF 1608 50V 5% R/TP NP0
			C507	OCC180CK41A	18PF 1608 50V 5% R/TP NP0
			C508	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C509	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C514	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
			C515	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
			C516	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
			C517	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C518	OCH8106J691	10UF 35V M 105STD (CYL) R/TP
			C521	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C522	OCH8106F611	10UF 16V M 85STD(CYL) R/TP
			C523	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
			C524	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7R

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		C613	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C701	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C702	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C703	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C704	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C706	0CC101CK41A	100PF 1608 50V 5% R/TP NP0
		C707	0CC101CK41A	100PF 1608 50V 5% R/TP NP0
		C708	0CC101CK41A	100PF 1608 50V 5% R/TP NP0
		C709	0CC101CK41A	100PF 1608 50V 5% R/TP NP0
		C710	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y
		C711	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C712	0CE477EF610	470UF KMG,RD 16V 20% BULK FL
		C713	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C719	0CC101CK41A	100PF 1608 50V 5% R/TP NP0
		C720	0CC101CK41A	100PF 1608 50V 5% R/TP NP0
		C723	0CE477EF610	470UF KMG,RD 16V 20% BULK FL
		C801	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C802	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y
		C803	0CC102CK41A	1000PF 1608 50V 5% R/TP NP0
		C804	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C805	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C806	0CC102CK41A	1000PF 1608 50V 5% R/TP NP0
		C807	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y
		C808	0CC102CK41A	1000PF 1608 50V 5% R/TP NP0
		C809	0CH3105F946	1UF 16V Z F 2012 R/TP
		C810	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C811	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y
		C812	0CC102CK41A	1000PF 1608 50V 5% R/TP NP0
		C813	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y
		C814	0CC102CK41A	1000PF 1608 50V 5% R/TP NP0
		C815	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C816	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C817	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C818	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C819	0CC102CK41A	1000PF 1608 50V 5% R/TP NP0
		C828	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C829	0CC102CK41A	1000PF 1608 50V 5% R/TP NP0
		C830	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y
		C831	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y
		C832	0CC102CK41A	1000PF 1608 50V 5% R/TP NP0
DIODEs				
		D501	0DS181009AA	KDS181 TP KEC SOT-23 80V 3
		D701	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D702	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D703	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D704	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D705	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D706	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D707	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D708	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D709	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D710	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D711	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D712	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D713	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D714	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D715	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D716	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D717	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D718	0DS226009AA	KDS226 TP KEC SOT-23 80V 30

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		D719	0DS226009AA	KDS226 TP KEC SOT-23 80V 30
		D903	0DRGS00281A	MBRF10H100CT GENERAL SEMICON
		D906	0DR206000AA	MBRF2060CT BK G.I ITO220 60V
		ZD501	0DZ910009FE	UDZS 9.1B TP ROHM - - 9.1V -
		ZD701	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
		ZD702	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
		ZD703	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
		ZD704	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
		ZD705	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
ICs				
		U101	0IPRPS5002A	SIL141BCT80 SILICON IMAGE 80
		U102	0IPRPMR002A	MX88L295EC MACRONIX 128P,PQF
		U103	0IRH765700B	BA7657F 24P,SOP TP INPUT SIG
		U104	0TF632509AA	FDC6325L TP FAIRCHILD 8V 2.4
		U201	0IPRPMR001A	MX88L250EC-X MACRONIX 128P,P
		U401	0ITH638300B	THC63LVD83R THINE 56P,TSSOP
		U501	0ISG240860B	M24C08W6 SGS-THOMSON 8SOP R/
		U502	0IZZTSZ198A	MYSON 42PIN BK OTP LB504N
		U503	0IKE704200J	KIA7042AF SOT-89 TP 4.2V VOL
		U504	0ISG240260A	M24C02-MN6 SO8 TP 2K SERIAL
		U505	0ISG240260A	M24C02-MN6 SO8 TP 2K SERIAL
		U701	0IMO741420B	MC74HCT14ADR2 14P,SOIC TP LE
		U703	0IPH740800H	74F08D 14P,SOIC TP QUAD 2-IN
		U704	0IPH740800H	74F08D 14P,SOIC TP QUAD 2-IN
		U705	0ITI748600N	SN74F86DR 14SOIC TP 2-INPUT
		U706	0IMO741420B	MC74HCT14ADR2 14P,SOIC TP LE
		U801	0IRH033000A	BA033SFP P/MOLD-5 TP REGULAT
		U802	0IRH033200A	BA033FP-E2 MOLD-3 TP REGULAT
		U803	0IPMGON007A	NCP1117ST25T3 ON SEMI SOT223
		U804	0IRH033200A	BA033FP-E2 MOLD-3 TP REGULAT
		U805	0TFFC80009A	FAIRCHILD FDC6326L R/TP SOT-
		U806	0ISS780500H	KA78M05-R 3P,D-PAK TP 5V 0.5
COILS & COREs				
		L101	6210TCE001G	HH-1M3216-501 CERATEC 3216MM
		L102	6210TCE001G	HH-1M3216-501 CERATEC 3216MM
		L103	6210TCE001G	HH-1M3216-501 CERATEC 3216MM
		L104	6210TCE001K	HB-1H2012-260JT CERATEC 2012
		L105	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L106	6210TCE001G	HH-1M3216-501 CERATEC 3216MM
		L201	6210TCE001G	HH-1M3216-501 CERATEC 3216MM
		L202	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L203	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L204	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L205	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L501	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L502	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L503	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L504	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L505	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L701	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L702	6210TCE001G	HH-1M3216-501 CERATEC 3216MM
		L703	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L704	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L805	6210TCE001G	HH-1M3216-501 CERATEC 3216MM
TRANSISTOR				
		Q4	0TR390409AE	FAIRCHILD KST3904(LGEMTF) TP

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		Q101	0TR162309CA	KSC1623 TP SAMSUNG SOT23 NP
		Q501	0DS301109AA	MMBD301LT1 TP MOTOROLA SOT23
		Q502	0DS301109AA	MMBD301LT1 TP MOTOROLA SOT23
		Q504	0DS301109AA	MMBD301LT1 TP MOTOROLA SOT23
		Q505	0TR162309CA	KSC1623 TP SAMSUNG SOT23 NP
		Q506	0TR162309CA	KSC1623 TP SAMSUNG SOT23 NP
		Q701	0TR390409AE	FAIRCHILD KST3904(LGEMTF) TP
		Q703	0TR390409AE	FAIRCHILD KST3904(LGEMTF) TP
RESISTORS				
		R101	0RJ2000D677	200 OHM 1/10 W 5% 1608 R/TP
		R102	0RJ2000D677	200 OHM 1/10 W 5% 1608 R/TP
		R103	0RJ2000D677	200 OHM 1/10 W 5% 1608 R/TP
		R104	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R105	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R106	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R107	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R108	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R109	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R110	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R111	0RJ1003D677	100K OHM 1/10 W 5% 1608 R/TP
		R112	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R113	0RJ5600D677	560 OHM 1/10 W 5% 1608 R/TP
		R114	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R115	0RJ2000D677	200 OHM 1/10 W 5% 1608 R/TP
		R116	0RJ4703D677	470K OHM 1/10 W 5% 1608 R/TP
		R120	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R129	0RJ2202D677	22K OHM 1/10 W 5% 1608 R/TP
		R132	0RJ5600D677	560 OHM 1/10 W 5% 1608 R/TP
		R133	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R134	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R135	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R137	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R138	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R139	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R140	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R141	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R142	0RJ1500D677	150 OHM 1/10 W 5% 1608 R/TP
		R143	0RJ1500D677	150 OHM 1/10 W 5% 1608 R/TP
		R144	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R145	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R146	0RJ1500D677	150 OHM 1/10 W 5% 1608 R/TP
		R147	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/TP
		R201	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R202	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R203	0RJ0102D677	10 OHM 1/10 W 5% 1608 R/TP
		R204	0RJ0102D677	10 OHM 1/10 W 5% 1608 R/TP
		R205	0RJ0102D677	10 OHM 1/10 W 5% 1608 R/TP
		R206	0RJ1004D677	1000000 OHM 1/10 W 5% 1608 R
		R401	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R402	0RJ5601D477	5.6K OHM 1/10 W 1% 1608 R/TP
		R403	0RJ0102D677	10 OHM 1/10 W 5% 1608 R/TP
		R501	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R502	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R503	0RJ1500D677	150 OHM 1/10 W 5% 1608 R/TP
		R504	0RJ1500D677	150 OHM 1/10 W 5% 1608 R/TP
		R505	0RJ1500D677	150 OHM 1/10 W 5% 1608 R/TP
		R506	0RJ1004D677	1000000 OHM 1/10 W 5% 1608 R
		R507	0RJ0102D677	10 OHM 1/10 W 5% 1608 R/TP
		R508	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R509	0RJ0102D677	10 OHM 1/10 W 5% 1608 R/TP

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		R510	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R511	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R512	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R513	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R514	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R515	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R516	0RJ3301D677	3.3K OHM 1/10 W 5% 1608 R/TP
		R517	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R518	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R519	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R520	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R521	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R522	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R523	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R524	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R525	0RJ1500D677	150 OHM 1/10 W 5% 1608 R/TP
		R526	0RJ1500D677	150 OHM 1/10 W 5% 1608 R/TP
		R527	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R528	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R529	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R530	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R531	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R532	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R534	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R535	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R536	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R537	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R538	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R539	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R540	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R541	0RJ2202D677	22K OHM 1/10 W 5% 1608 R/TP
		R542	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R543	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R544	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R545	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R550	0RJ0221D677	2.2 OHM 1/10 W 5% 1608 R/TP
		R551	0RJ0221D677	2.2 OHM 1/10 W 5% 1608 R/TP
		R556	0RJ2700D677	270 OHM 1/10 W 5% 1608 R/TP
		R557	0RJ2700D677	270 OHM 1/10 W 5% 1608 R/TP
		R558	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R559	0RJ3301D677	3.3K OHM 1/10 W 5% 1608 R/TP
		R560	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R561	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R562	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R563	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R564	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R565	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R566	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R568	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R569	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R570	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R571	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R572	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R701	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R702	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R704	0RJ0472D677	47 OHM 1/10 W 5% 1608 R/TP
		R705	0RJ0472D677	47 OHM 1/10 W 5% 1608 R/TP
		R706	0RJ1801D677	1.8K OHM 1/10 W 5% 1608 R/TP
		R707	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R708	0RJ0752D677	75 OHM 1/10 W 5% 1608 R/TP
		R709	0RJ0752D677	75 OHM 1/10 W 5% 1608 R/TP
		R710	0RJ0752D677	75 OHM 1/10 W 5% 1608 R/TP

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R712	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R713	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R714	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R715	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R716	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R717	0RJ0752D677	75 OHM 1/10 W 5% 1608 R/TP
		R718	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R719	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R720	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R721	0RJ1801D677	1.8K OHM 1/10 W 5% 1608 R/TP
		R722	0RJ0472D677	47 OHM 1/10 W 5% 1608 R/TP
		R723	0RJ0472D677	47 OHM 1/10 W 5% 1608 R/TP
		R724	0RJ0752D677	75 OHM 1/10 W 5% 1608 R/TP
		R725	0RJ0752D677	75 OHM 1/10 W 5% 1608 R/TP
		R726	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R727	0RJ4700D677	470 OHM 1/10 W 5% 1608 R/TP
		R728	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R729	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R730	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R731	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R732	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R733	0RJ4701D477	4.7K OHM 1/10 W 1% 1608 R/TP
		R734	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R736	0RJ4700D677	470 OHM 1/10 W 5% 1608 R/TP
		R738	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R739	0RJ1000D677	100 OHM 1/10 W 5% 1608 R/TP
		R740	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R741	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R801	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R802	0RJ5600D677	560 OHM 1/10 W 5% 1608 R/TP
		R803	0RJ2202D677	22K OHM 1/10 W 5% 1608 R/TP
		R804	0RH1500D622	150 1/10W 5 D.R/TP
		R805	0RH1500D622	150 1/10W 5 D.R/TP
		R806	0RH1500D622	150 1/10W 5 D.R/TP
		R807	0RH1500D622	150 1/10W 5 D.R/TP
		R808	0RH1500D622	150 1/10W 5 D.R/TP
		R809	0RH1500D622	150 1/10W 5 D.R/TP
		R810	0RH1500D622	150 1/10W 5 D.R/TP
		R811	0RH1500D622	150 1/10W 5 D.R/TP
		R812	0RH1500D622	150 1/10W 5 D.R/TP
		R813	0RH1500D622	150 1/10W 5 D.R/TP
		R822	0RJ1003D677	100K OHM 1/10 W 5% 1608 R/TP
		RA101	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA102	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA103	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA104	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA105	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA106	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA107	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA108	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA109	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA110	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA111	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA112	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA201	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA202	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA203	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA204	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA205	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP
		RA206	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/TP

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
OTHERs				
		X201	6202TST001A	SX-1 SUNNY ,SMS, 14.31818MHZ
		X501	6202TST003D	HC-49/SM5H KONY CHIP 12 MHZ
POWER BOARD				
		BD901	0DD260000BE	D2SB60 SHINDENKEN
	△	C901	0CBZTBU002D	0.33UF D 275V K M/PP NI FM22
	△	C902	0CKZTBU003D	SC SAMWHA 250V 1000PF M BULK
	△	C903	0CKZTBU003D	SC SAMWHA 250V 1000PF M BULK
		C905	0CZZTAB004B	KMG SYE / SWE 400V 68UF 20%
		C906	0CK10201515	1000P 1KV K B TS
		C907	0CE105EK638	1UF KMG 50V M FM5 TP 5
		C908	0CE476EH638	47UF KMG 25V M FM5 TP 5
		C909	181-288B	MKT 100V 104JTR PHS26104
		C911	0CE108EF630	1000UF KMG 16V M FM5 BULK
		C914	0CE335EK638	3.3UF KMG 50V M FM5 TP 5
		C916	181-288L	MKT 100V 823JTR PHS26823
		C918	0CE108EF630	1000UF KMG 16V M FM5 BULK
	△	C920	0CKZTBU003C	SC E 472M 14.0BW7 250V BK7.5
		C922	0CK10201515	1000P 1KV K B TS
		C923	0CK10201515	1000P 1KV K B TS
		D901	0DD400709CB	UF4007 TP G.I DO204AL 1000V
		D904	0DR400409AB	UF4004 TP G.I DO204AL 400V 1
		D908	0DZ620009AP	P6KE200A GENERAL SEMICONDUCT
		ZD901	0DZ750009AG	MTZJ7.5B TP ROHM-K DO34 0.5W
		IC901	0IPMGPF004A	TOP246F POWER INTEGRATION TO
		IC904	0ISS431000A	KA431AZ (LM431AZ)
	△	F901	0FZZTTH001E	TIME LAG HBC 2153.15MXE(LEAD
	△	LF901	6200TZZ001B	- 0 BK L/FILTER, 9MH,LG56BP
	△	P901	6620TKB002C	BCP031S-A,BAE EUN AC UNIVERS
	△	PC901	0IL1817000E	LTV-817M B 4P BK PHOTO COUPL
	△	T901	6170TMZ133A	EER3016 1200 UH V-10PIN LG50
		TH901	6322A00002B	SCK-102L THINKING 100HM 20%
		R901	0RD6803A609	680K OHM 1/2 W (7.0) 5% TA52
		R902	0RD1004Q609	1M OHM 1/4 W (3.4) 5% TA52
		R903	0RD1004Q609	1M OHM 1/4 W (3.4) 5% TA52
		R904	0RD4704Q609	4.7M OHM 1/4 W (3.4) 5% TA52
		R905	0RD4704Q609	4.7M OHM 1/4 W (3.4) 5% TA52
		R906	0RX4702J609	47K OHM 1 W 5% TA52
		R907	0RD0471Q609	4.70 1/4W(3 5% TA52
		R908	0RD0681Q609	6.8 OHM 1/4 W (3.4) 5% TA52
		R909	0RD1001Q609	1K 1/4W(3 5% TA52
		R913	0RN1302F409	13K 1/6W 1% TA52
		R917	0RD1201Q609	1.20K 1/4W(3 5% TA52
		R918	0RD1000Q609	100 1/4W(3 5% TA52
		R920	0RN1302F409	13K 1/6W 1% TA52
		R921	0RN2701F409	2.70K 1/6W 1% TA52
		R923	0RD1202Q609	12K 1/4W(3 5% TA52
CONTROL BOARD				
		LED1	0DLRH0058AA	ROHM SML-521MYWT86 R/TP GREE
		R1	0RJ4701D677	4.7K OHM 1/10 W 5% 1608 R/TP
		R2	0RJ4701D677	4.7K OHM 1/10 W 5% 1608 R/TP
		R3	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/TP
		R4	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/TP
		R5	0RJ3301D677	3.3K OHM 1/10 W 5% 1608 R/TP
		R6	0RJ3301D677	3.3K OHM 1/10 W 5% 1608 R/TP
		R7	0RJ9101D677	9.1K OHM 1/10 W 5% 1608 R/TP
		SW1	140-058E	SKHV10910B LGEC NON 12V 20A
		SW2	140-058E	SKHV10910B LGEC NON 12V 20A

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*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		SW3	140-058E	SKHV10910B LGEC NON 12V 20A
		SW4	140-058E	SKHV10910B LGEC NON 12V 20A
		SW5	140-058E	SKHV10910B LGEC NON 12V 20A
		SW6	140-058E	SKHV10910B LGEC NON 12V 20A
		SW7	140-058E	SKHV10910B LGEC NON 12V 20A
		ZD1	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
		ZD2	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323

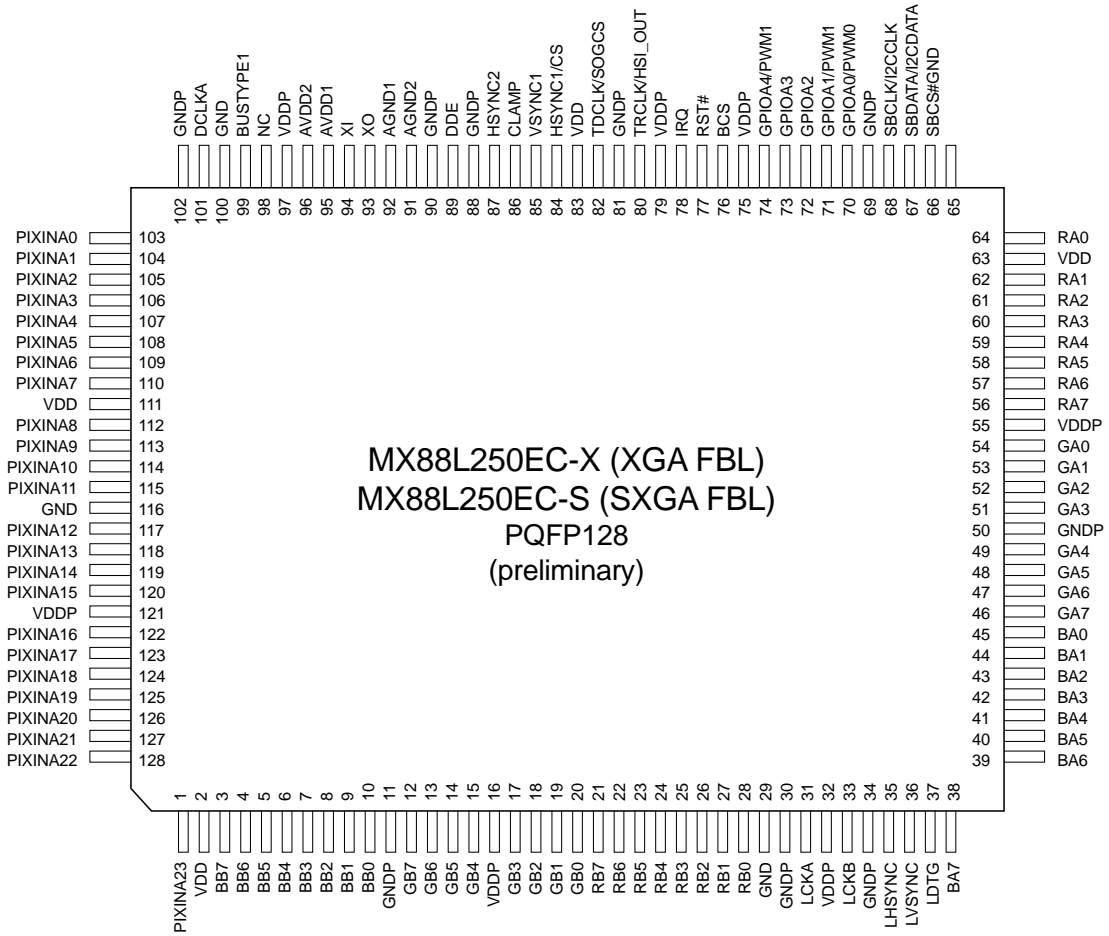
USB BOARD

		C1	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C2	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
		C6	0CH3105F946	1UF 16V Z F 2012 R/TP
		C8	0CC150CK41A	15PF 1608 50V 5% R/TP NP0
		C9	0CC150CK41A	15PF 1608 50V 5% R/TP NP0
		C18	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C23	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C24	0CC470CK41A	47PF 1608 50V 5% R/TP NP0
		C25	0CC470CK41A	47PF 1608 50V 5% R/TP NP0
		C27	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C28	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y)
		C31	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C32	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C37	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
		C38	0CC470CK41A	47PF 1608 50V 5% R/TP NP0
		C39	0CC470CK41A	47PF 1608 50V 5% R/TP NP0
		D1	ODS181009AA	KDS181 TP KEC SOT-23 80V 3
		L4	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L5	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L13	6210TCE001B	HH-1H3216-500JT CERATEC 3216
		L14	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L15	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L16	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L17	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L18	6210TCE001B	HH-1H3216-500JT CERATEC 3216
		L19	6210TCE001P	HB-1S2012-121JT CERATECH 201
		L20	6210TCE001P	HB-1S2012-121JT CERATECH 201
		R1	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R2	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		R8	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R9	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/TP
		R19	0RJ1502D677	15K OHM 1/10 W 5% 1608 R/TP
		R21	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R22	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R23	0RJ1502D677	15K OHM 1/10 W 5% 1608 R/TP
		R24	0RJ1502D677	15K OHM 1/10 W 5% 1608 R/TP
		R25	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R26	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		R28	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R30	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R31	0RJ1502D677	15K OHM 1/10 W 5% 1608 R/TP
		R32	0RJ1502D677	15K OHM 1/10 W 5% 1608 R/TP
		R34	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R35	0RJ0222D677	22 OHM 1/10 W 5% 1608 R/TP
		R37	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/TP
		R40	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/TP
		R41	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/TP
		U1	0IRH033200A	BA033FP-E2 MOLD-3 TP REGULAT
		U2	0IPRPT1007A	TUSB2036 TEXAS INSTRUMENT 32
		U3	0ITI204200B	TPS2042ADR TEXAS INSTRUMENT
		X1	6202TST001C	SX-1, SUNNY SMD, 6.0MHZ, .50P
		ZD1	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323

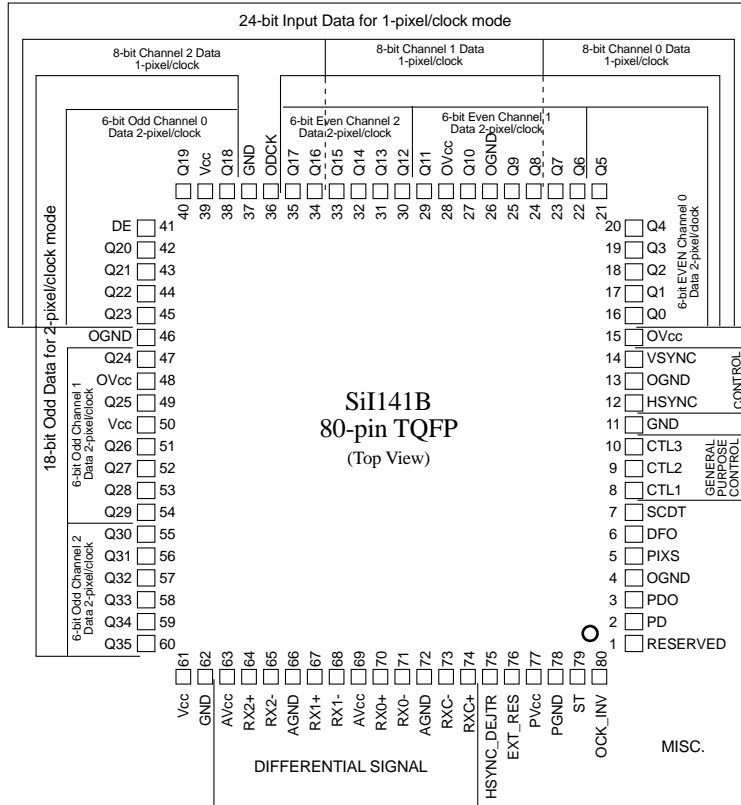
DATE: 2002. 6. 17.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		ZD4	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
		ZD7	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
		ZD8	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
		ZD11	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323
		ZD12	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323

PIN CONFIGURATION

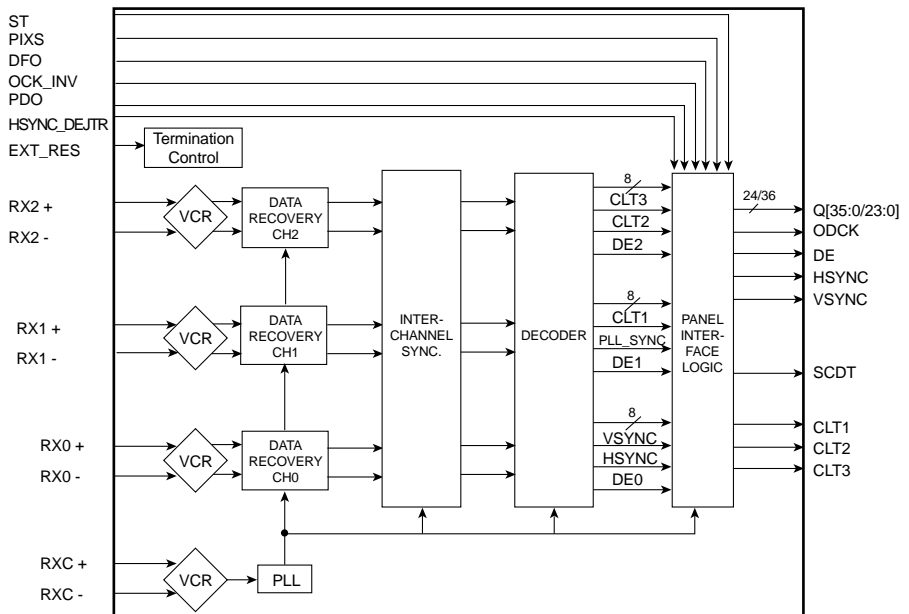
MX88L250EC-X, MX88L250EC-S 128p Pin



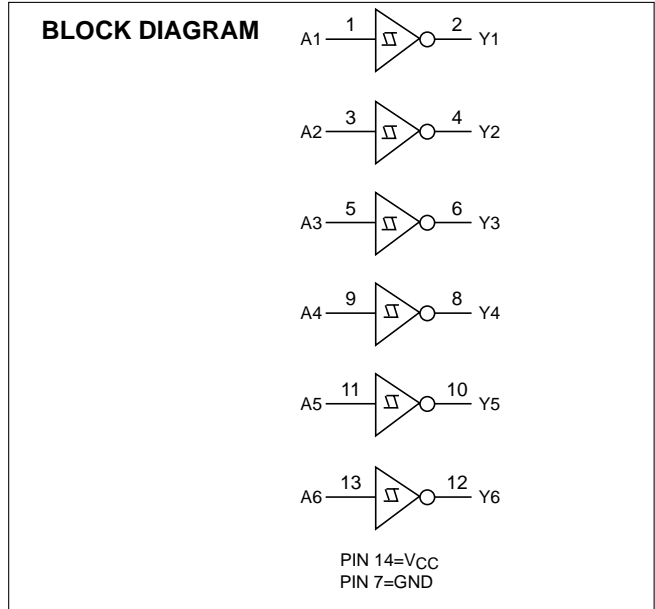
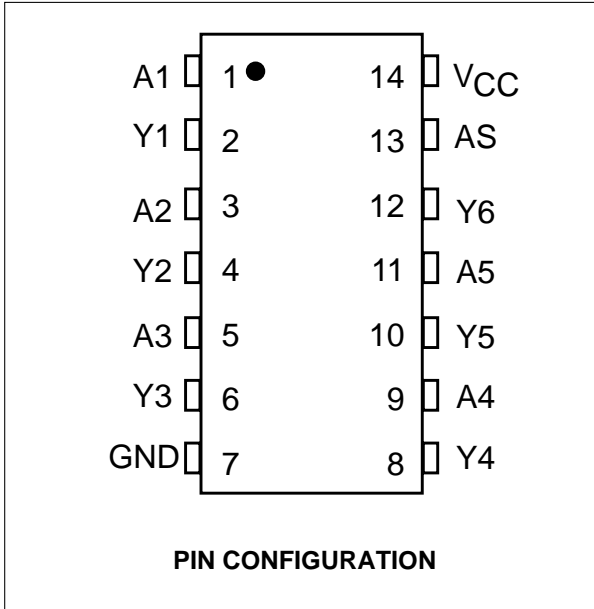
Pin Diagram



Block Diagram

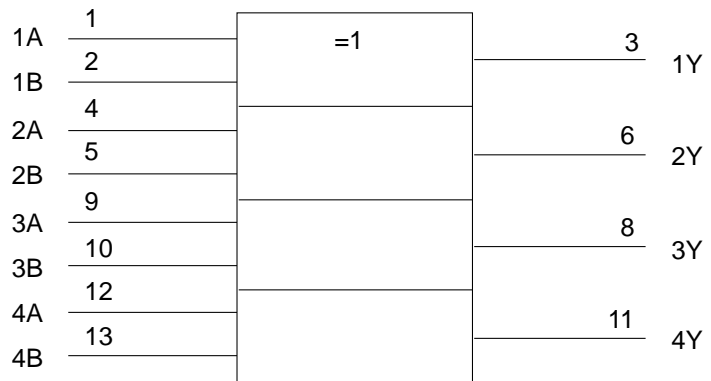
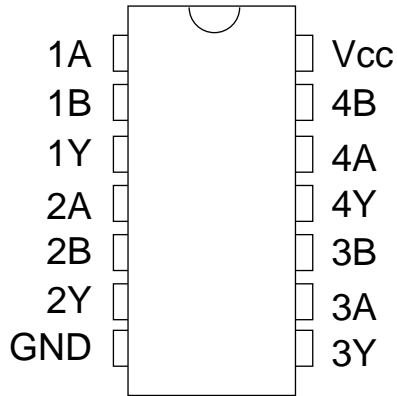


MC74HCT14ADR2 14P



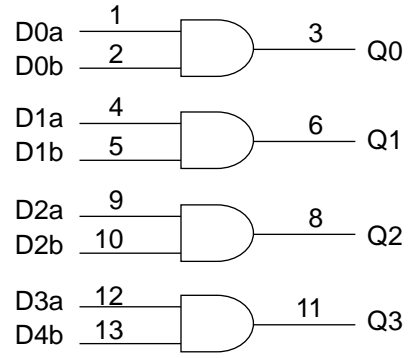
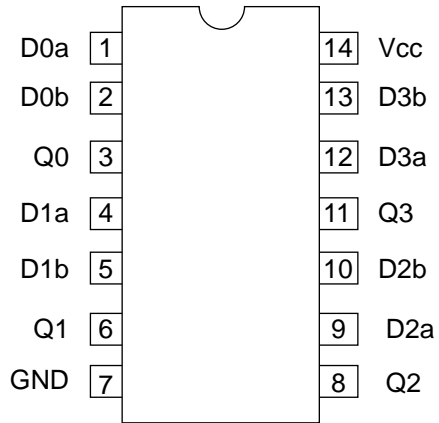
SN54F86, SN74F86

TOP VIEW



74F08

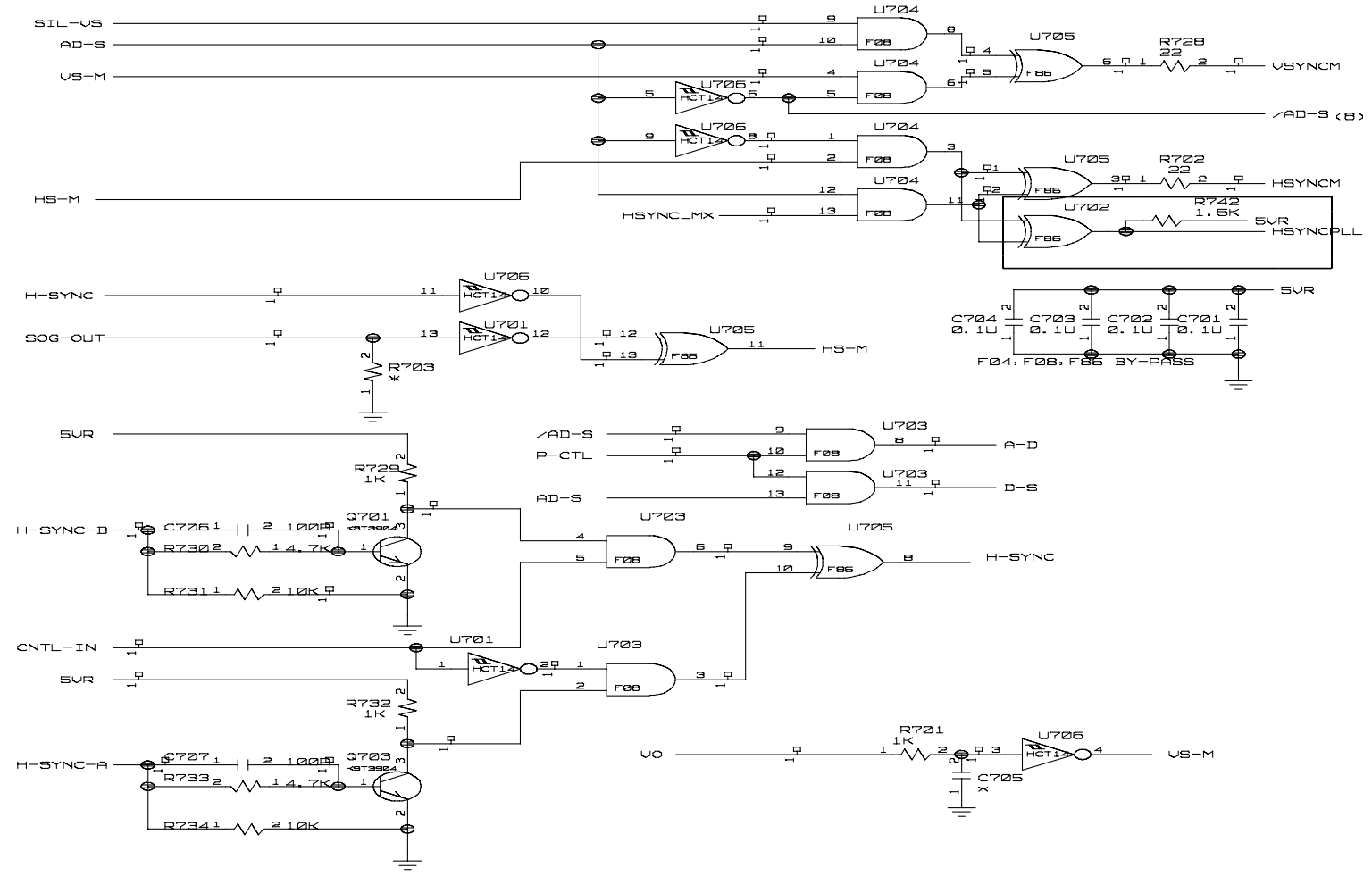
TOP VIEW



Vcc = Pin 14
GND = Pin 7

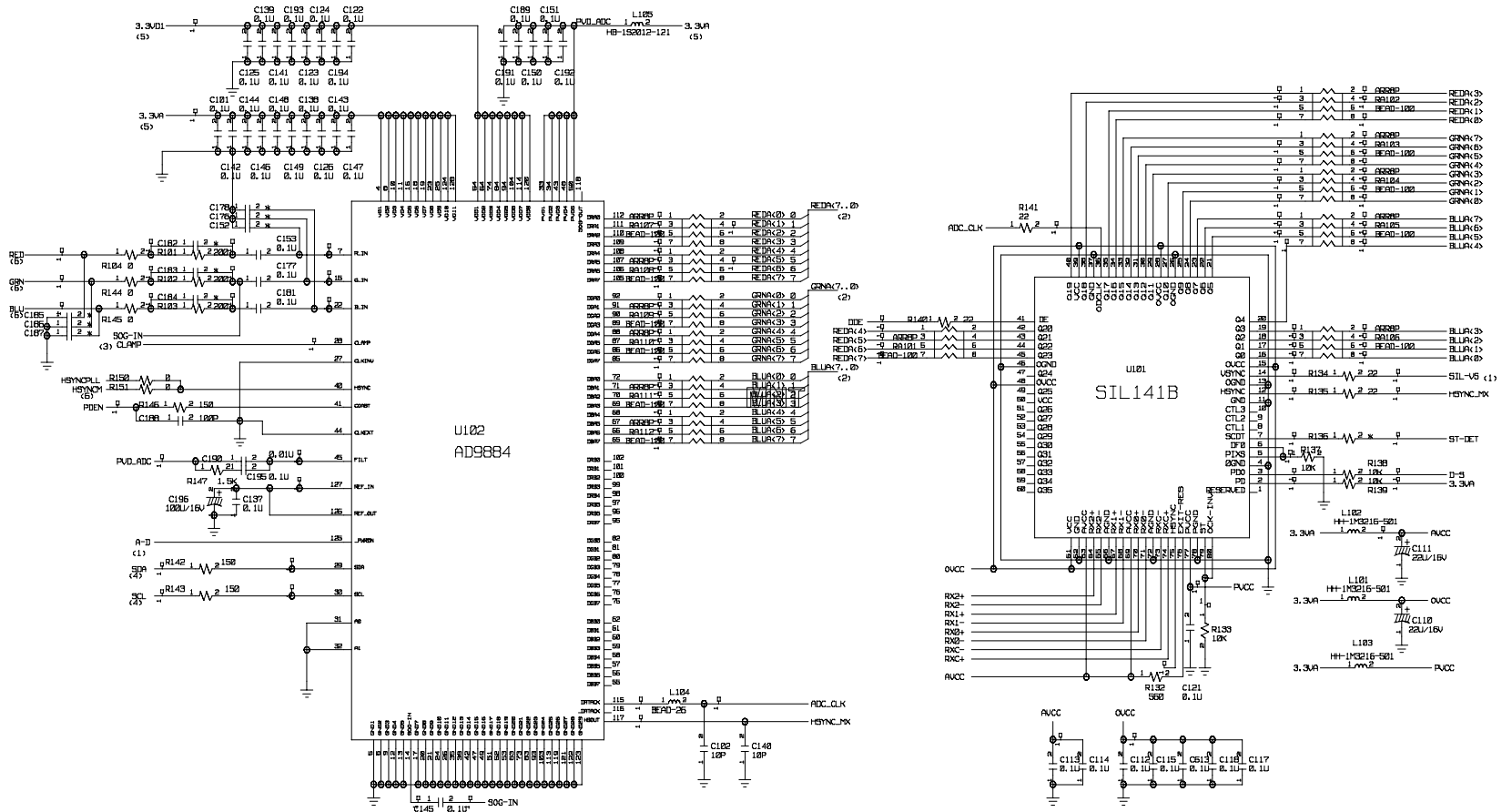
1. HV SYNC DETECT

1 LB504N<MX88L250EC>
H/V SYNC DETECT

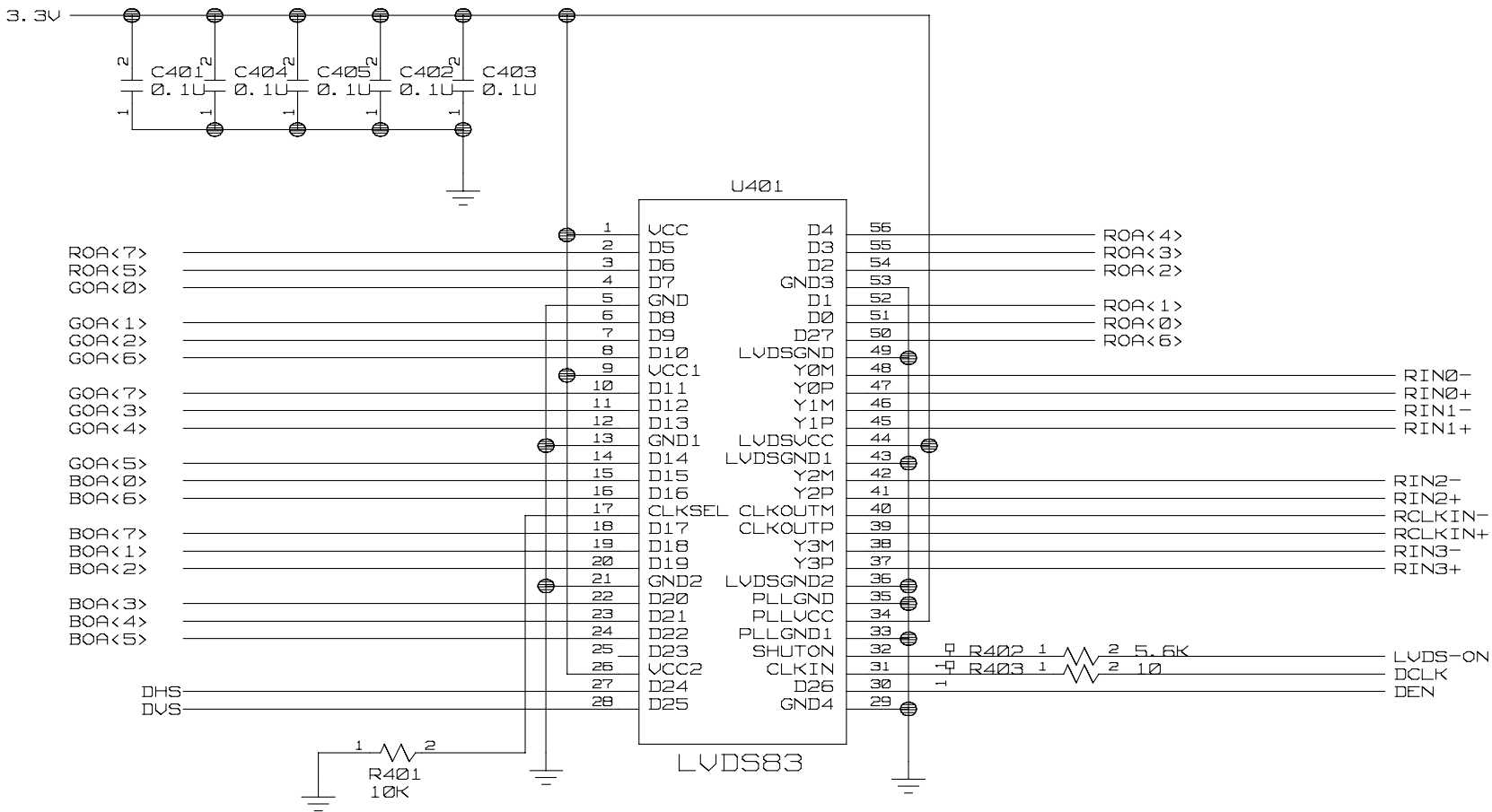


#2 LB504N (MX88L250EC) AD9884 (PRE-AMP/PLL/ADC)/SIL141B

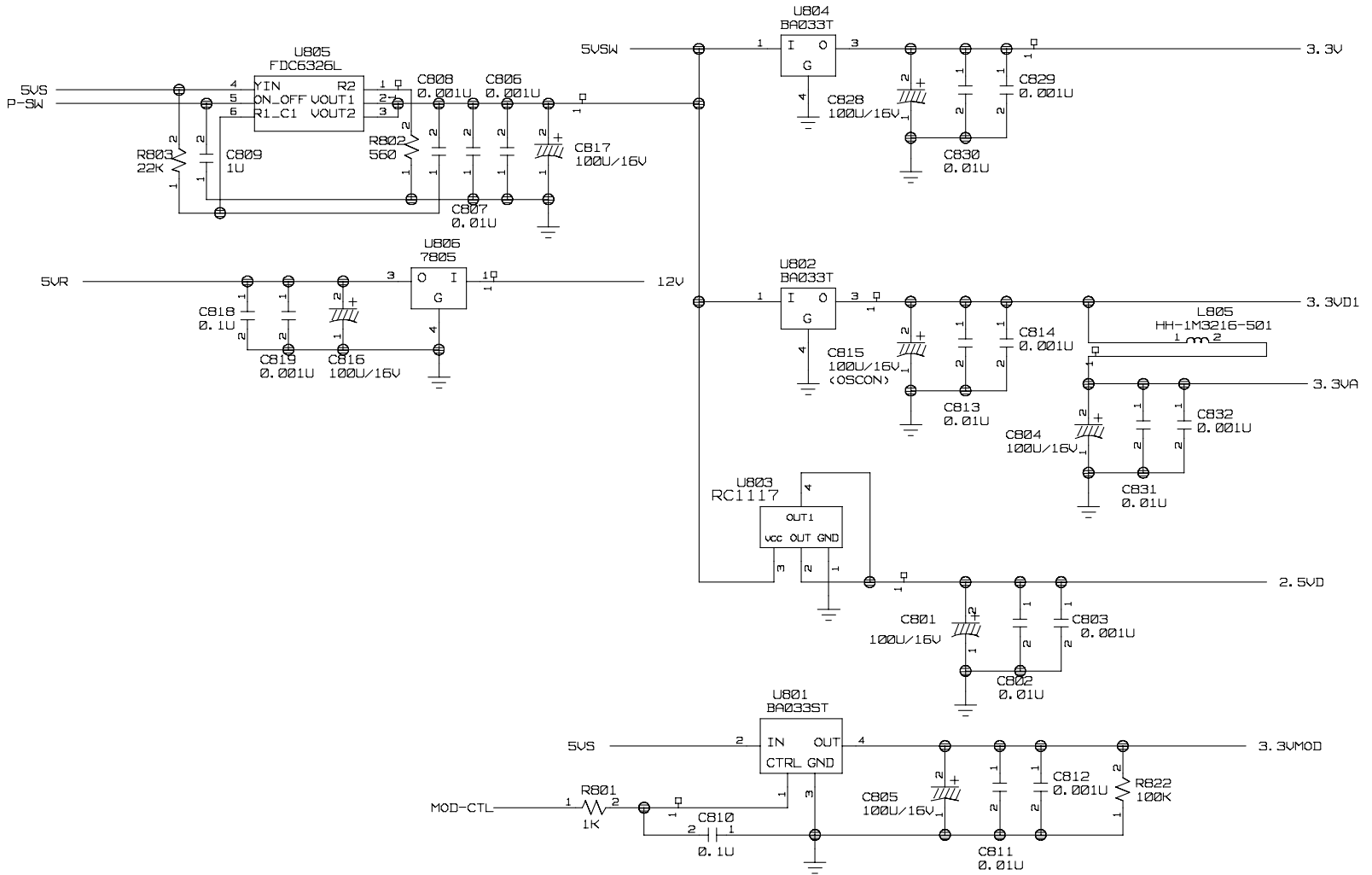
2. AMP/TMDS



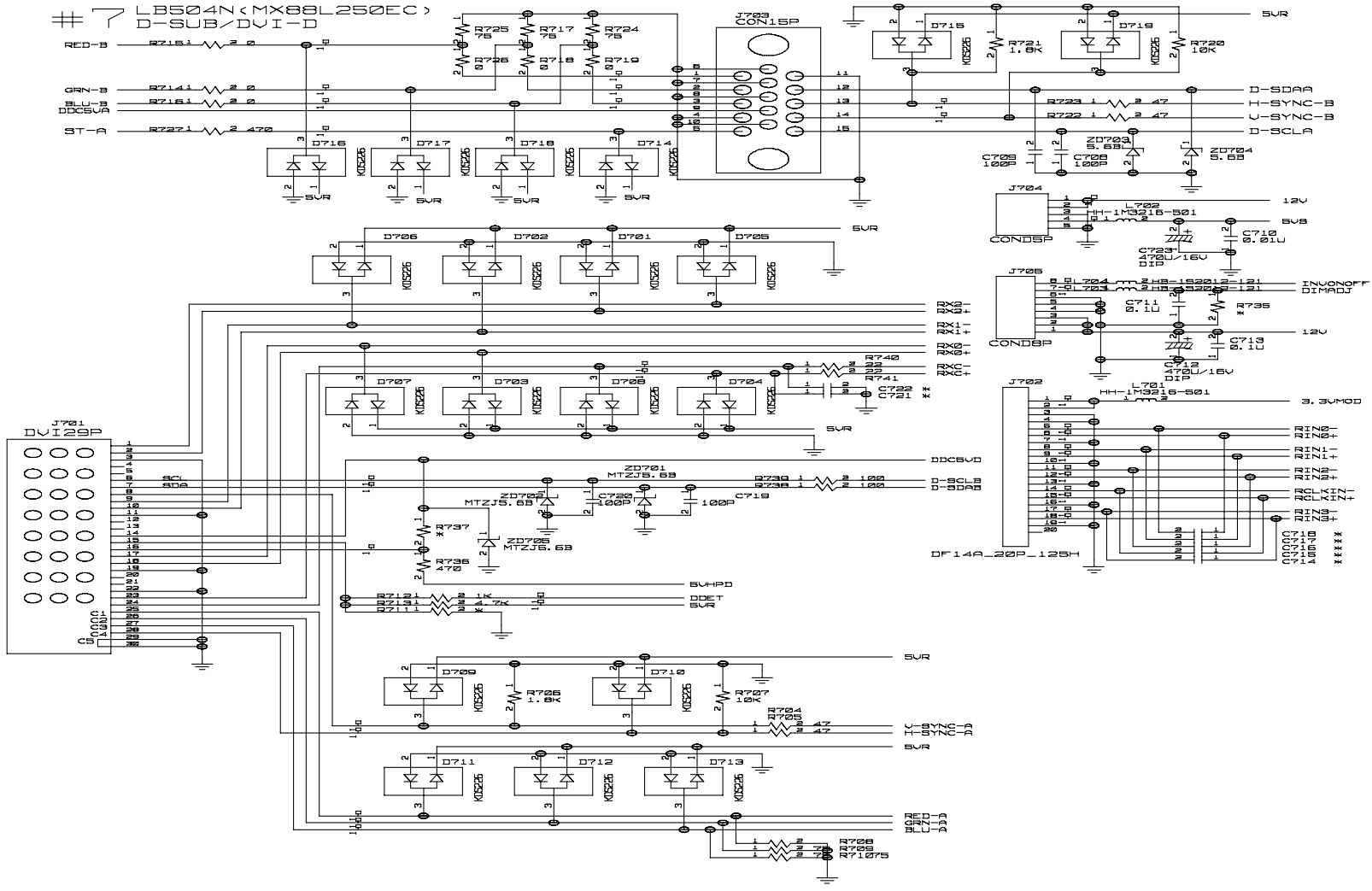
#4 LB504N (MX88L250EC) OUTPUT (LVDS/CONNECTOR)



#6 LB504N (MX88L250EC) POWER

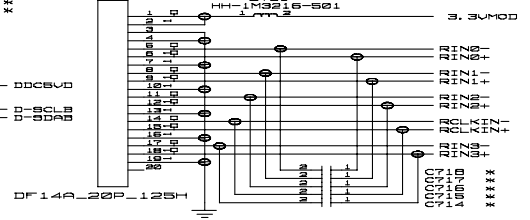
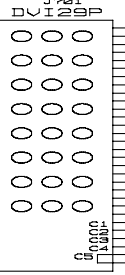


7. D-SUB/DVI-D

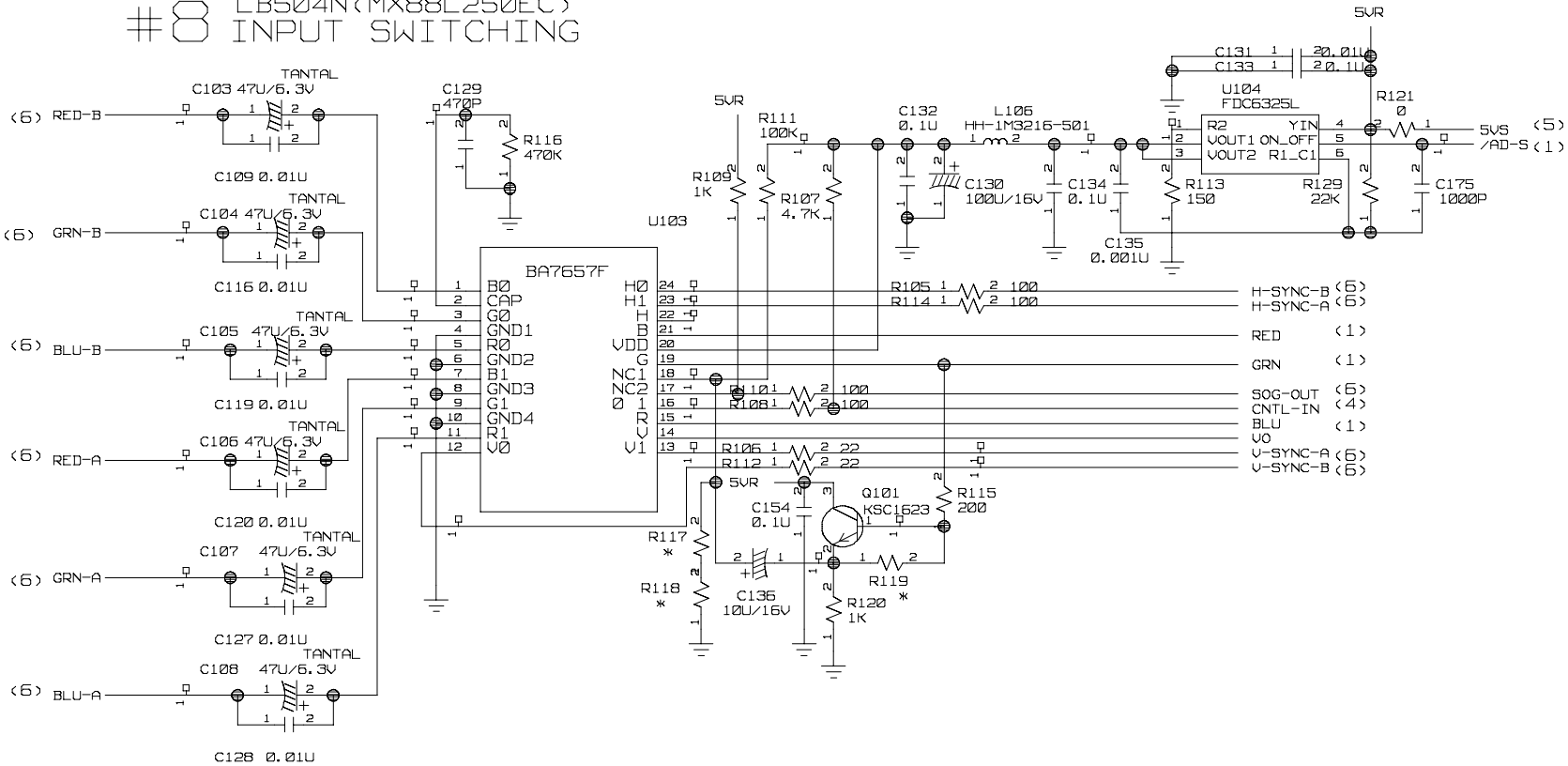


1 (B004Z / C3X00L) 000FC)
D-10CB / DC H-D

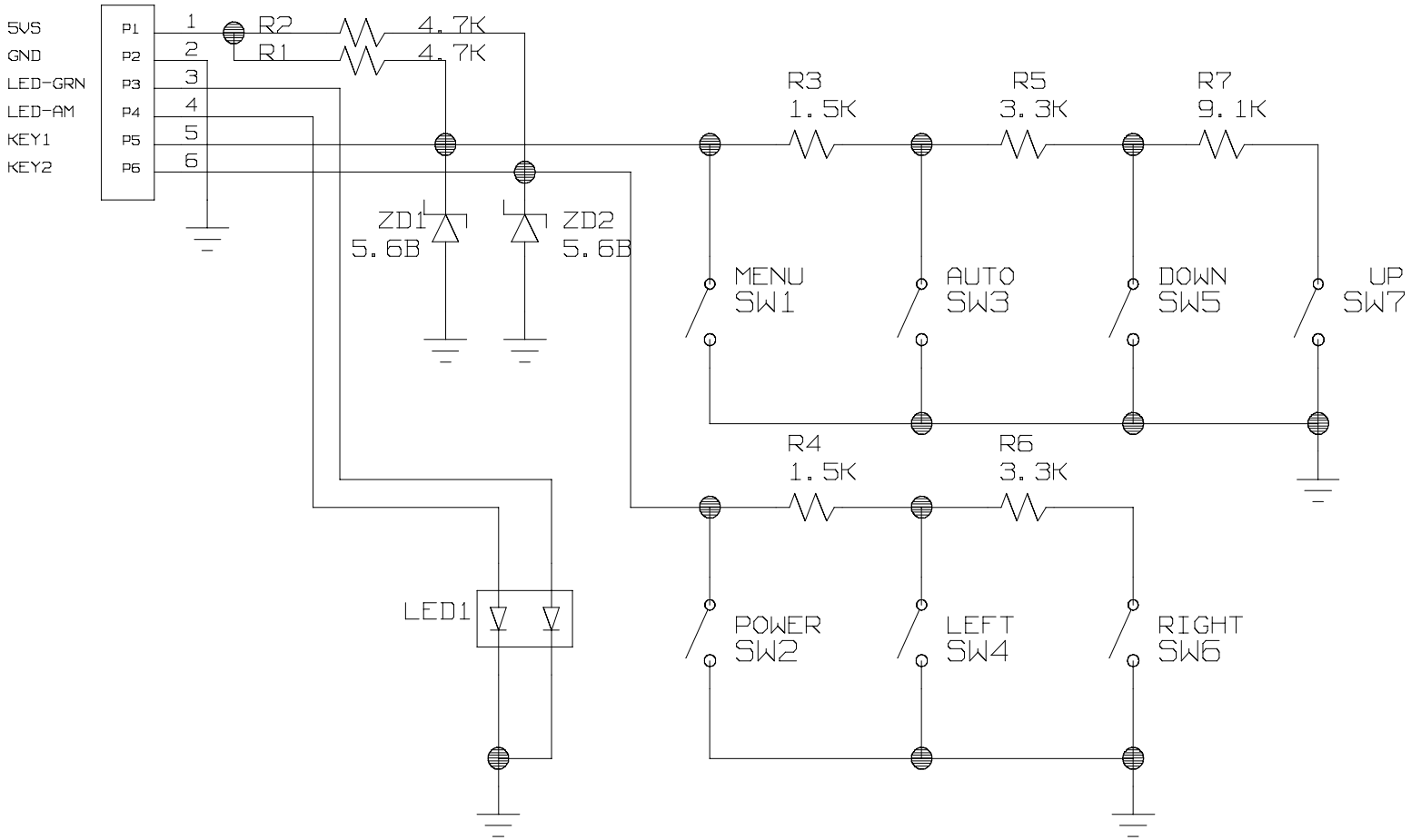
RED-B R7151
ORZ-B R7141
DL5-B R7161
BT-3 R7271



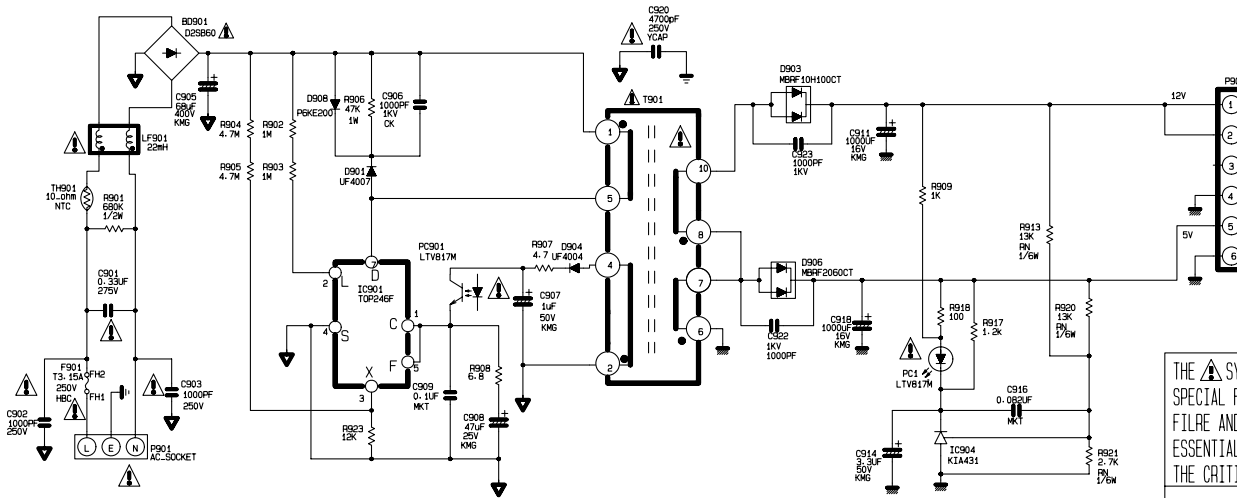
#8 LB504N (MX88L250EC) INPUT SWITCHING





J1 CONF6 KEY PART LB500J



Internal Power Circuit (LB500J) 2002.01.04



THE  SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FILTRATION AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC.

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