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# COLOR MONITOR SERVICE MANUAL

CHASSIS NO. : CL-32

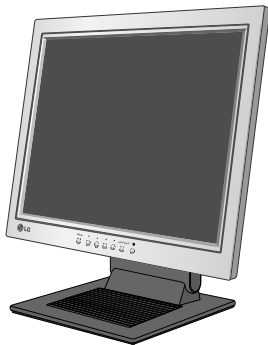
FACTORY MODEL: LB504K

**MODEL: FLATRON L1510B (LB504K-GL)**

\*( ) ID LABEL MODEL No.

## 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(with FRC)/ 16M colors  
 Active Video Area : 15.0inch (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  $\geq 10$   
 Left : 55° min. Right : 55° min.  
 Top : 40° min. Bottom : 40° min.

2-2. Luminance  
 : 150(min.), 180(typ.) at Center point

2-3. Contrast Ratio :250(min.), 350(typ.)

### 3. SIGNAL (Refer to the Timing Chart)

3-1. Sync Signal  
 1) Type : Separate Sync. (Horizontal & Vertical)  
 2) Input Voltage Level : Low=0~0.8V, High=2.1~5.5V  
 3) Sync Polarity : Positive or Negative

3-2. Video Input Signal  
 1) Type : R, G, B Analog  
 2) Voltage Level : 0~0.714 V  
 a) Color 0, 0 : 0 Vp-p  
 b) Color 7, 0 : 0.467 Vp-p  
 c) Color 15, 0 : 0.714 Vp-p  
 3) Input Impedance : 75  $\Omega$

3-3. Operating Frequency  
 Horizontal : 30 ~ 63kHz  
 Vertical : 56 ~ 75Hz

### 4. POWER SUPPLY

4-1. Power  
 110~220V, 60Hz 0.6A

#### 4-2. Power Consumption

MODE	H/V SYNC	VIDEO	POWER CONSUMPTION	LED COLOR
POWER ON (MAX)	ON/ON	ACTIVE	less than 30 W	GREEN
POWER ON (NORMAL)	ON/ON	ACTIVE	less than 28 W	GREEN
STAND-BY	OFF/ON	OFF	less than 3 W	AMBER
SUSPEND	ON/OFF	OFF	less than 3 W	AMBER
DPMS OFF	-	-	less than 3 W	OFF

### 5. ENVIRONMENT

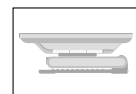
5-1. Operating Temperature: 10°C~35°C (50°F~95°F)  
 (Ambient)  
 5-2. Relative Humidity : 10%~80%  
 (Non-condensing)  
 5-3. MTBF : 50,000 Hours (Min.)  
 Lamp Life : 40,000 Hours (Min.)

### 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 : 5.1kg (11.24 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

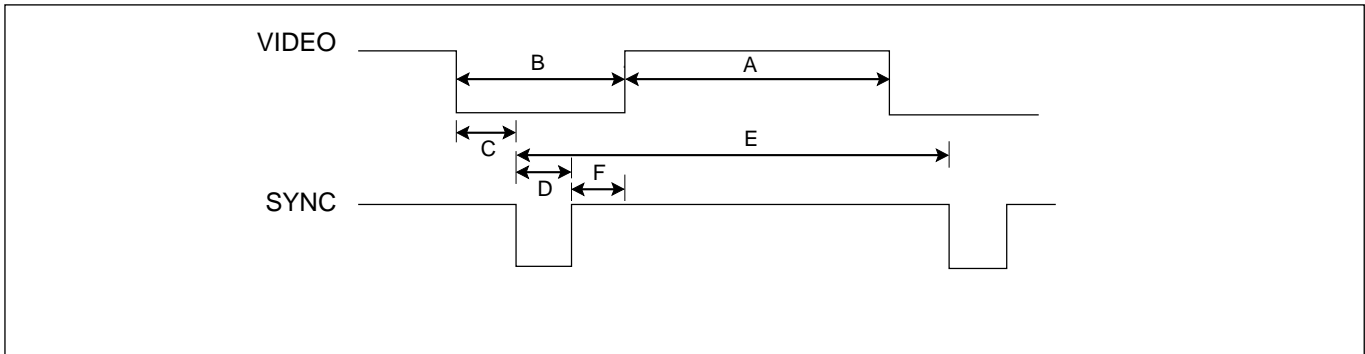
#### BE CAREFUL ELECTRIC SHOCK !

- 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	35.00 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)	-		75.0 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	

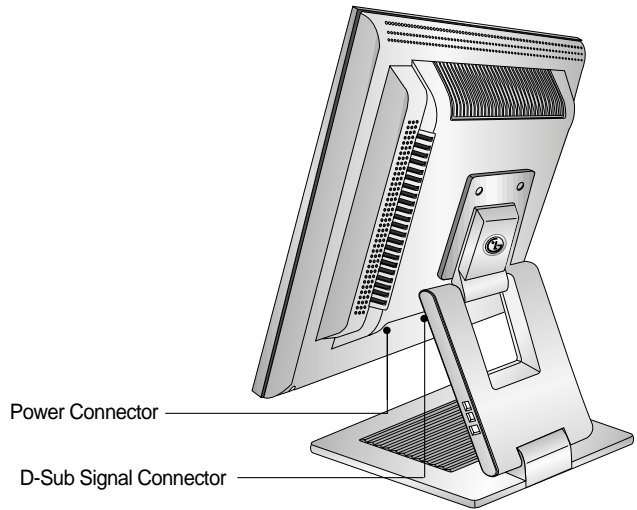
# OPERATING INSTRUCTIONS

## FRONT VIEW

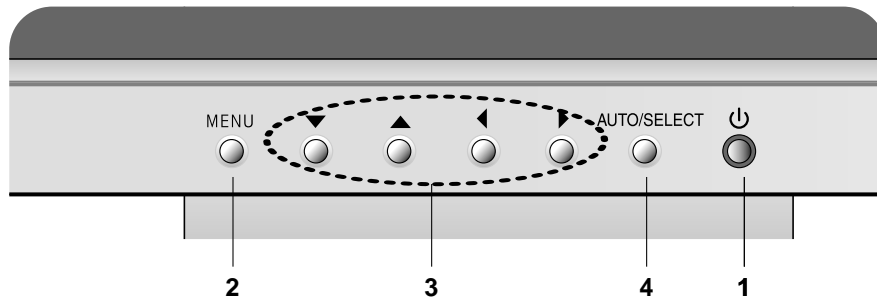


See front control panel

## REAR VIEW



## Front Control Panel



### 1. Power Button

Use this button to turn the display on or off.

#### <Power (DPMS) Indicator>

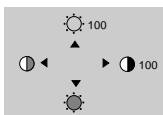
This Indicator lights up green when the display operates normally. If the display is in DPM (Energy Saving) mode, this indicator color changes to amber.

### 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. AUTO/SELECT Button

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



When adjusting your display settings, always press the **AUTO/SELECT** 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).

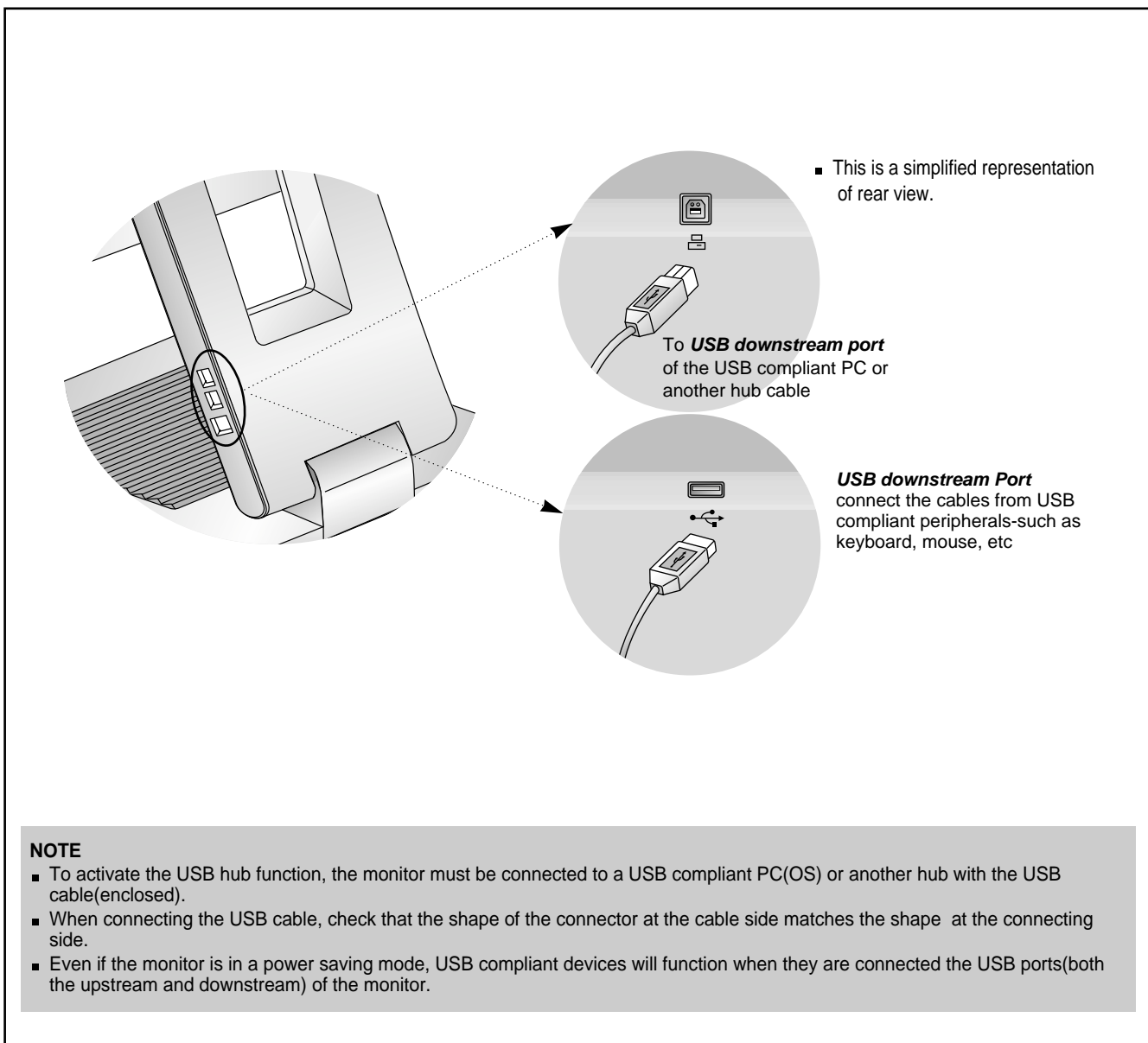
The best display mode is **1024x768**.

## Making use of USB (Universal Serial Bus)\*

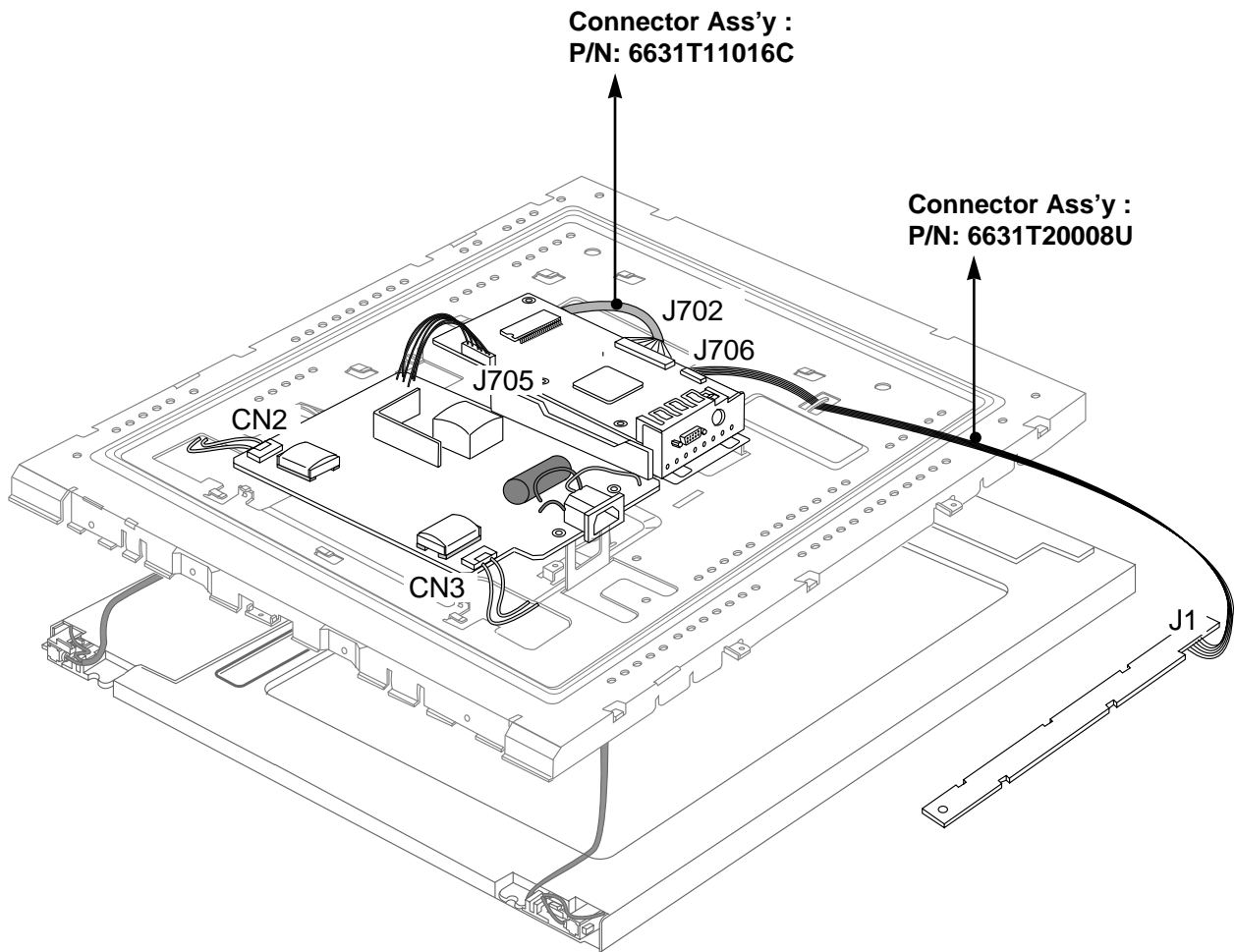
USB (Universal Serial Bus) is an innovation in connecting your different desktop peripherals conveniently to your computer. By using the USB, you will be able to connect your mouse, keyboard, and other to your monitor instead of having to connect them to your computer. This will give you greater flexibility 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 Plug 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

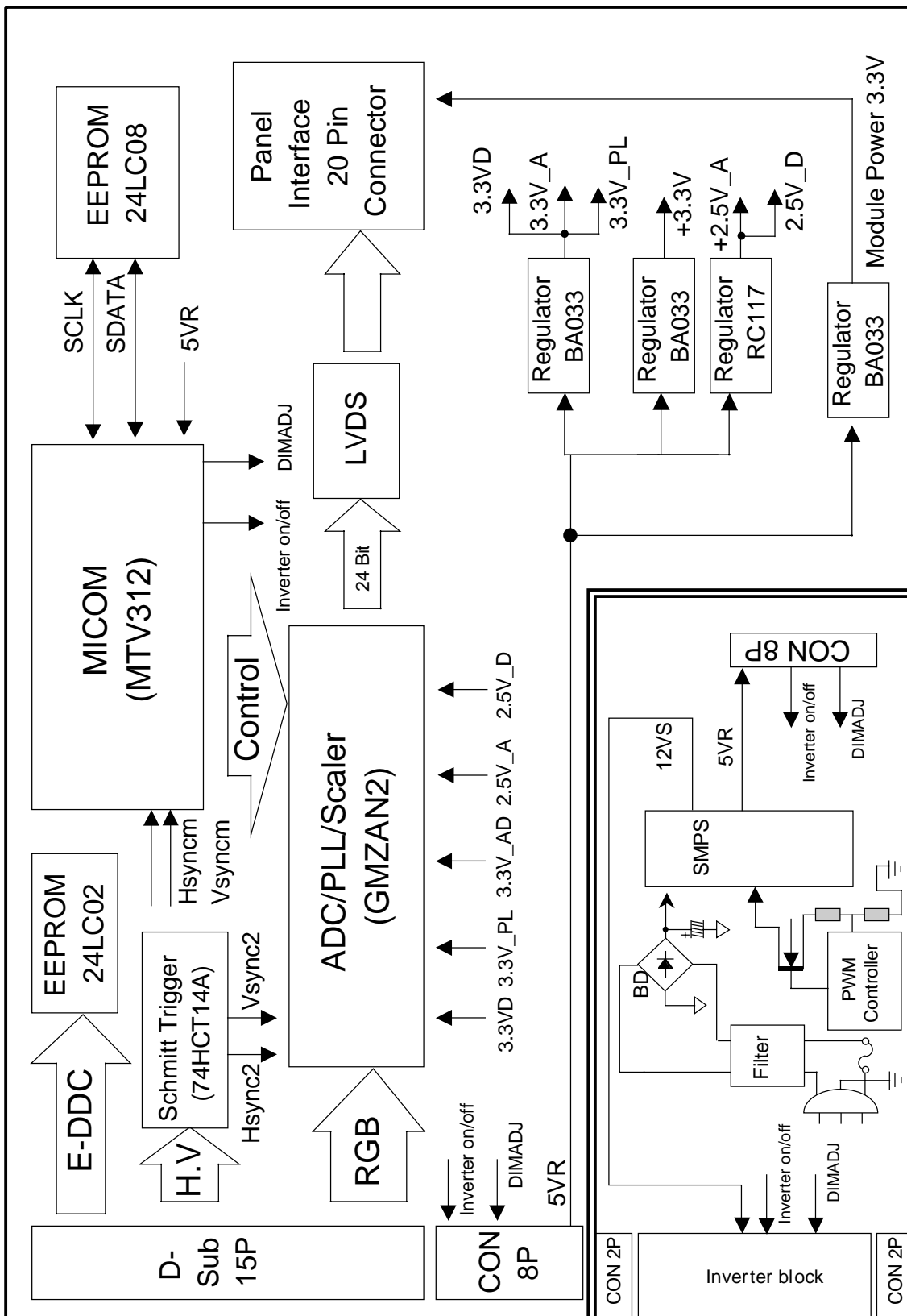
1. Connect the upstream port of the Display to the downstream port of the USB compliant PC or another hub using the USB cable. (Computer must have a USB port)
2. Connect the USB compliant peripherals to the downstream ports of the monitor.



# WIRING DIAGRAM



# BLOCK DIAGRAM





# DESCRIPTION OF BLOCK DIAGRAM

## 1. Scaler One chip IC(GMZAN-2, U201)

GMZAN-2 (U201) is one chip IC which it supports four internal function blocks of Video Amp, PLL, A/D converter and Video processor.

Video signal (0.7Vp.p) clamped through C207, 208, 209 with matching IC's proper cut off voltage.

This signal is processed as a proper 8 bit digital signal by U201's amplifying, phase locking, A/D converting, and scaling operations.

U201 outputs 24bit RGB data and control signals(Clock, Horizontal and Vertical sync, and Data Enable) as LVDS IC's input signals.

## 2. System Controller (Microprocessor) Circuit

- 1) Microprocessor (U501) distinguishes polarity and frequency by calculating horizontal and vertical sync input from signal source.
- 2) Microprocessor (U501) carries out power control by sending power-down trigger signal to each IC.
- 3) Microprocessor (U501) communicates with EEPROM (U502), and GMZAN-2 (U201) through IIC(2 lines) or 4 bit bus line. It makes all devices operated properly.
- 4) Microprocessor (U501) let User adjust screen by OSD function.

## 3. LVDS(Low Voltage Differential Signal, U411)

LVDS transmitter (U411) delivers digital signal to the receiver inside LCD module by method of abstraction. The abstracted signals are pairs of RIN0+-, RIN1+-, RIN2+-, RIN3+-, and RCLKIN+- of which voltage swing is 0.5V each.

When SHUTON pin's input is High, transmitter goes to power down mode.

## 4. DC/DC block

This block is composed of regulators which supplies 2.5V and 3.3V.

Each regulator's source power is 5VR from LIPS(LCD Inverter and Power Supply) block.

U806 supplies 2.5VD and 2.5VA and U802 supplies 3.3VD, 3.3V\_AD, and 3.3V\_PL powers to GMZAN-2's internal PLL, ADC, Pre-amp, and scaler by dropping down 5VR.

U805 supplies MODPWR-3.3V for LCD module's operation by dropping down 5VR.

## 5. LIPS Block (LCD Inverter and Power Supply)

This block supplies DC voltages of 5VS to interface board and 12V to inverter by converting AC input voltage of 100~240Vac.

Converting method is SMPS(Switching Mode Power Supply).

Inverter on/off signal from microprocessor makes inverter turned on or off .

DIMADJ signal from microprocessor does inverter's current adjustment for Brightness control.

# 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 LB504K 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.

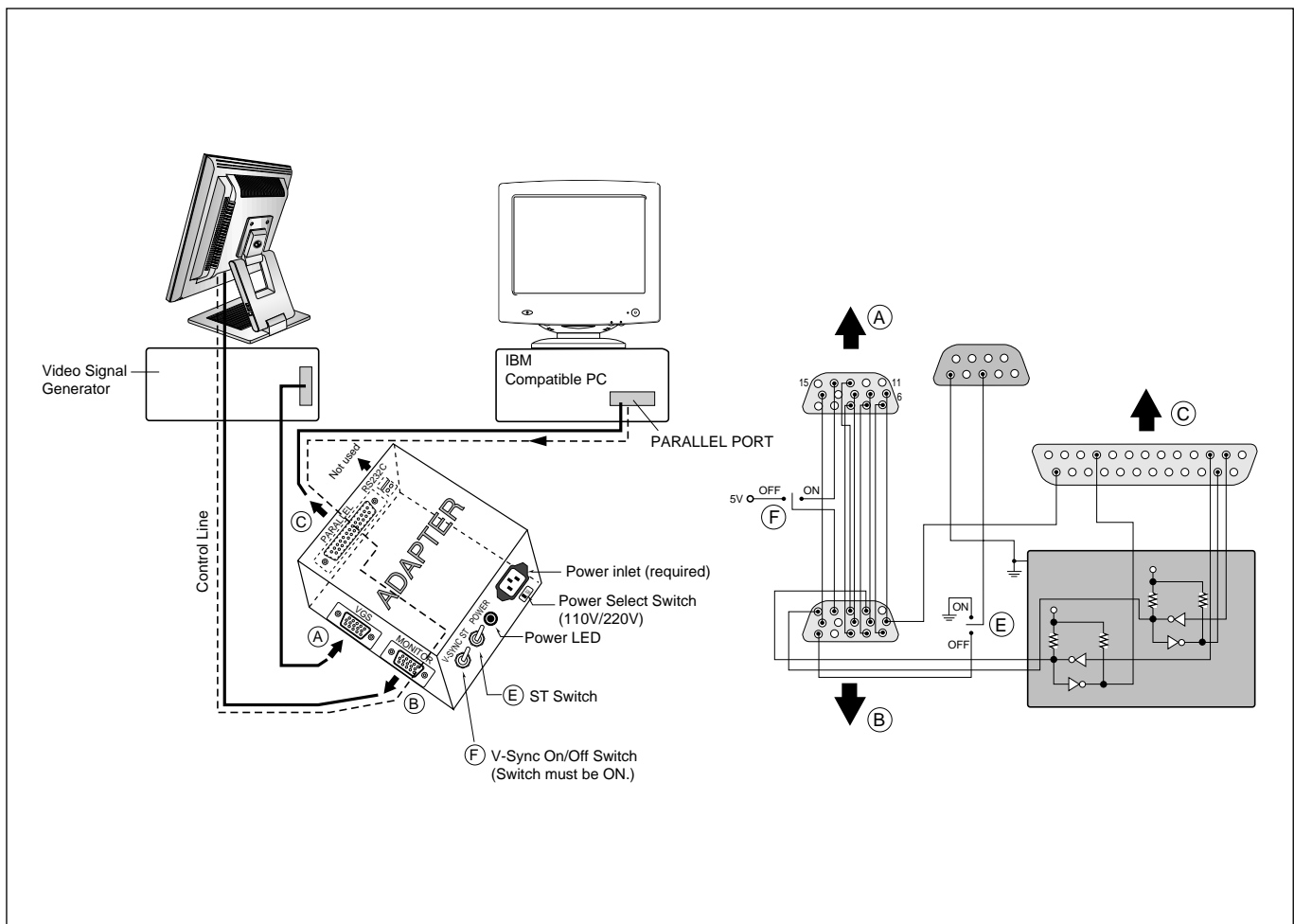
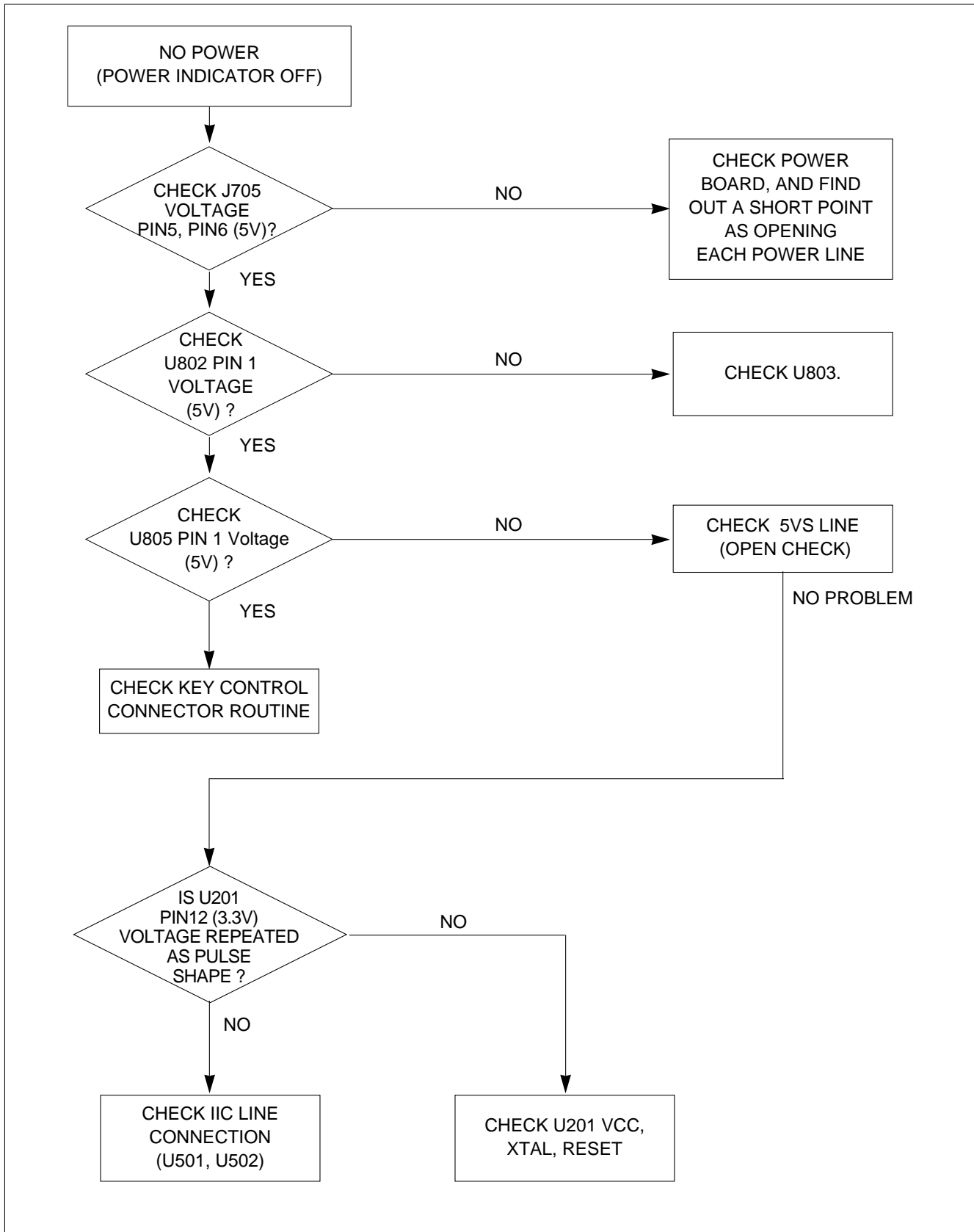


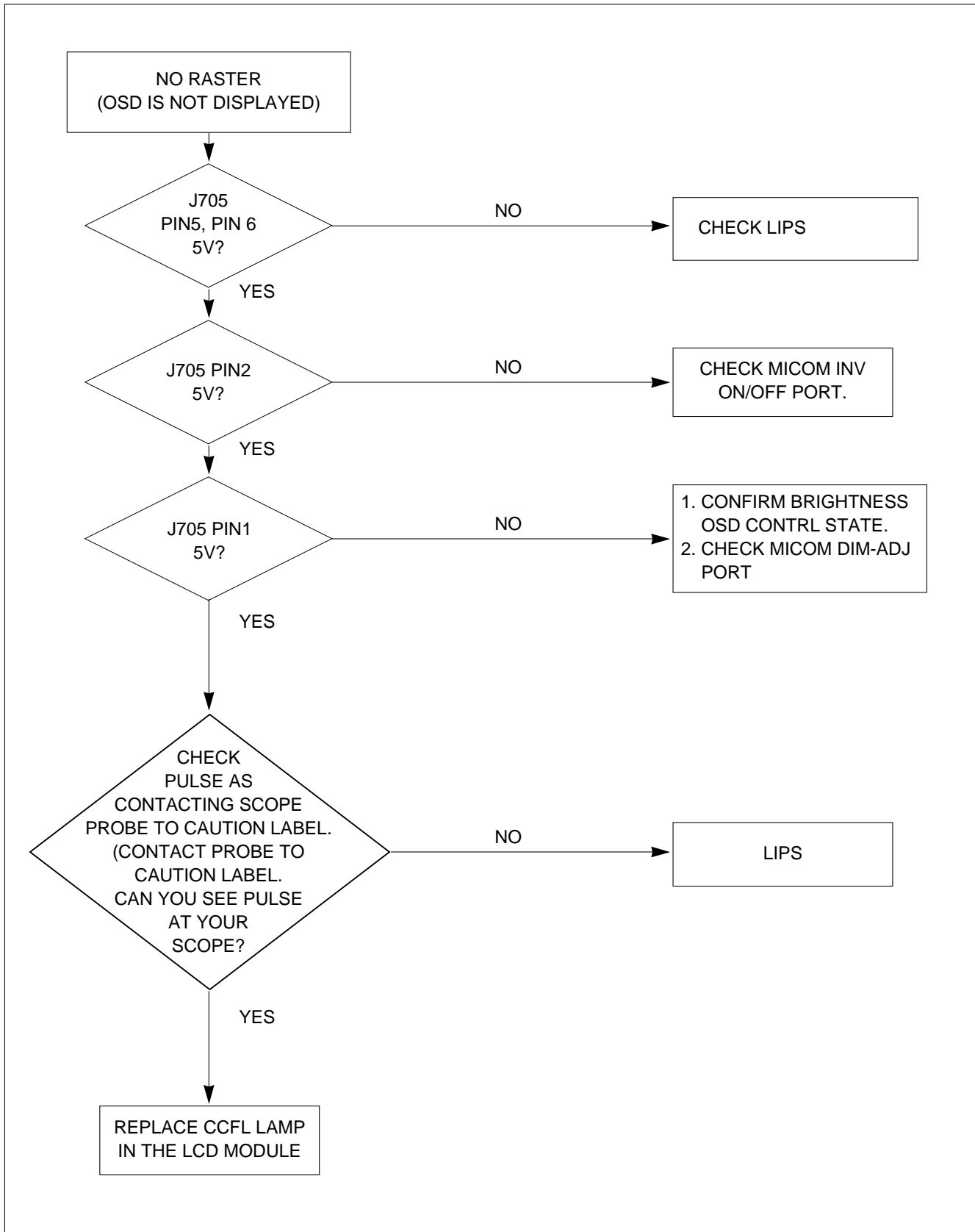
Figure 1. Cable Connection

# TROUBLESHOOTING GUIDE

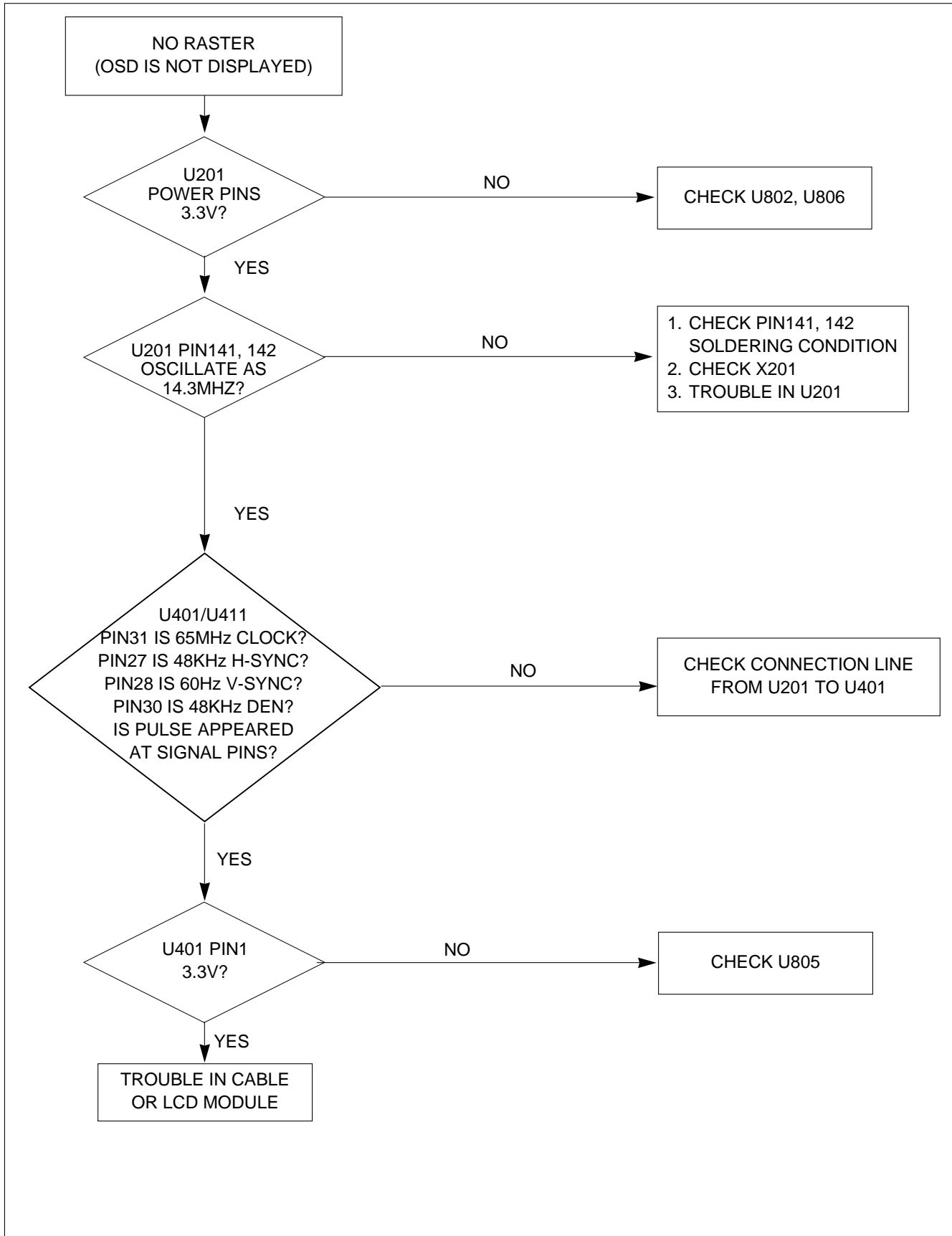
## 1. NO POWER



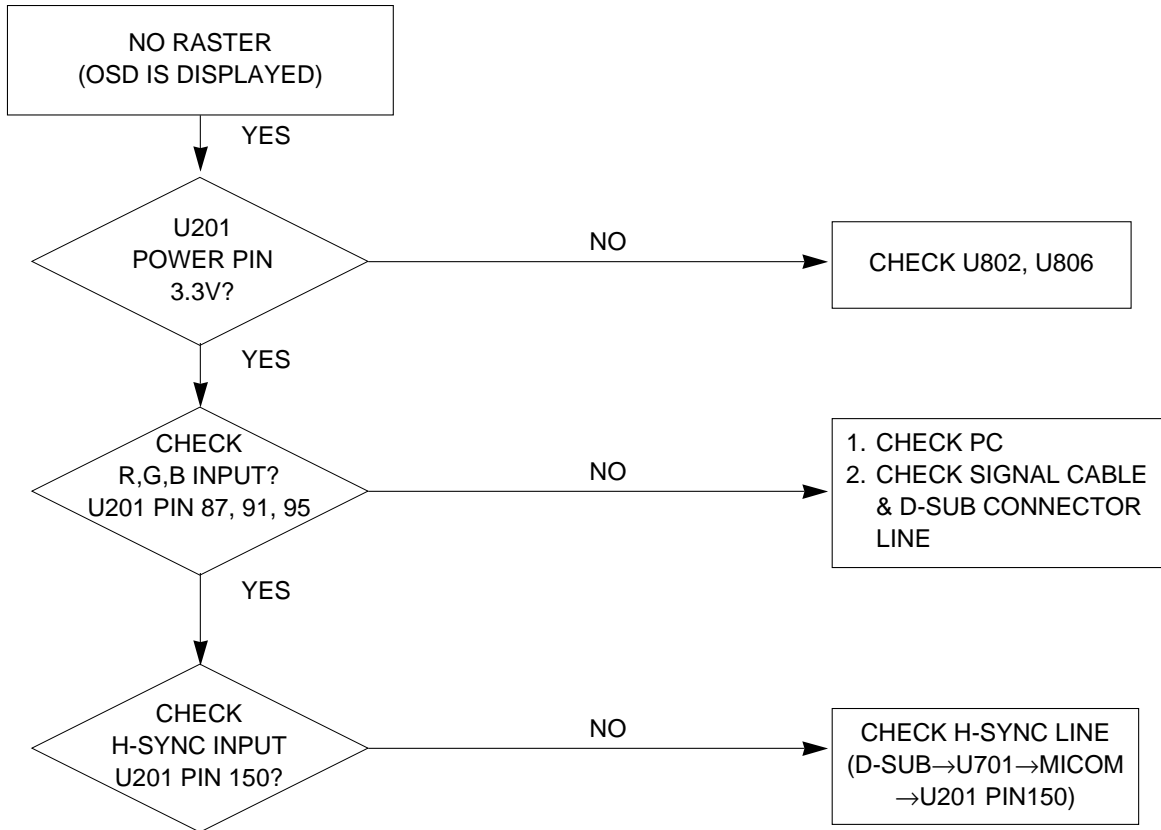
## 2. NO RASTER (OSD IS NOT DISPLAYED) – LIPS



### 3. NO RASTER (OSD IS NOT DISPLAYED) – gmZAN2

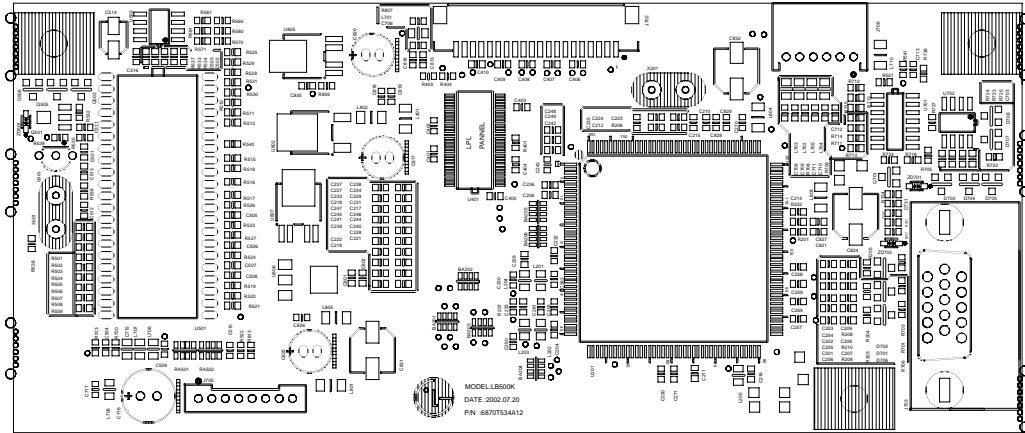


#### 4. NO RASTER (OSD IS DISPLAYED) – gmZAN2

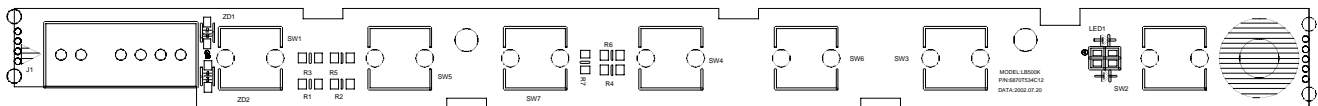


# PRINTED CIRCUIT BOARD

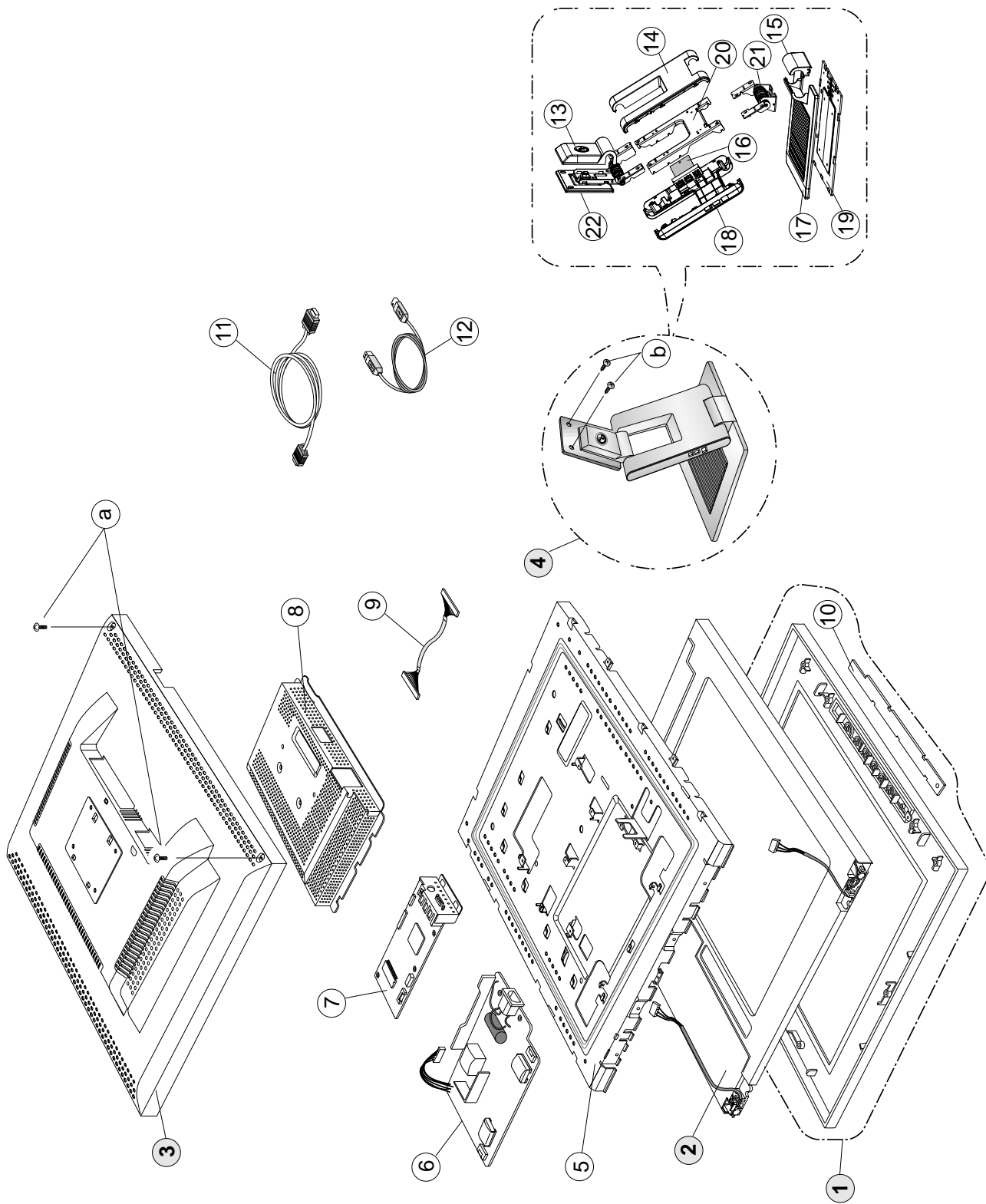
## 1. MAIN BOARD (Component Side)



## 2. CONTROL BOARD (Component Side)



# EXPLODED VIEW





## EXPLODED VIEW PARTS LIST

Ref. No.	Part No.	Description
1	3091TKL055J	CABINET ASSEMBLY, LB504K BRAND 3090TKL038 WA LOCAL
	3091TKL055P	CABINET ASSEMBLY, LB504K BRAND USB+TCO99+PIVOT <b>-Japan</b>
2	6304FLP025A	LCD(LIQUID CRYSTAL DISPLAY), LM150X06-A3M1 LG PHILIPS TFT COLOR 15.0 INCH XGA LVDS SMM
3	3809TKL026G	BACK COVER ASSEMBLY, LB500J 029A ,CKD
	3809TKL026A	BACK COVER ASSEMBLY, LB500J 3808TKL029A <b>-Japan</b>
4	3043TKK095B	TILT SWIVEL ASSEMBLY, LB504J . 2HINGE&PIVOT (SKD)
	3043TKK095A	TILT SWIVEL ASSEMBLY, LB504J . PIVOT&2-HINGE <b>-Japan</b>
5	4951TKS091E	METAL ASSEMBLY, FRAME MAIN, LPL(CKD, LB500K)
	4951TKS091D	METAL ASSEMBLY, FRAME MAIN, LPL(LB500K) <b>-Japan</b>
6	6634B00053A	ADAPTER, AC-DC, ADP-30EP 5V/12A 1A/1A LIPS FOR K-CHASSIS
7	3313TL5054D	MAIN TOTAL ASSEMBLY, LB500K(PRIME) BRAND CL-32
	3313TL5054A	MAIN TOTAL ASSEMBLY, LB500K LPL BRAND CL-32 <b>-Japan</b>
8	4950TKK424B	METAL, REAR C/SKD(LB500J)
	4950TKK424A	METAL, REAR LB500J <b>-Japan</b>
9	6631T11016C	CONNECTOR ASSEMBLY, 20P H-H 100MM UL20276 I/FACE CABLE LB500K
10	6871TST310B	PWB(PCB) ASSEMBLY ,SUB, LB500K(PRIME) CONTROL TOTAL BRAND CL-32
	6871TST310A	PWB(PCB) ASSEMBLY, SUB, LB500K CONTROL TOTAL BRAND CL-32 <b>-Japan</b>
11	6850TD9004A	CABLE, D-SUB, UL2990-9C(5.8) DT 1870MM GRAY(85964) LB500K DM
12	6866TDU002D	CABLE, D-SUB, UL20276SB10P+2C AWG#30 DT 1870MM GRAY(85964) BRAND DM
13	3550TKK264A	COVER, LB504J HINGE ROTATE
14	3550TKK266A	COVER, LB504J STAND REAR
15	3550TKK268A	COVER, LB504J HINGE BASE
16	6871TUT015A	PWB(PCB) ASSEMBLY, USB, LB886F SUB TOTAL BRAND CL-29
17	3550TKK267A	COVER, LB504J BASE TOP
18	3550TKK265A	COVER, LB504J STAND FRONT WITH USB
19	4950TKK444A	METAL BASE LB504J
20	4950TKK443A	METAL STAND LB504J
21	4951TKK089A	METAL ASSEMBLY, TILT UNIT BASE HINGE
22	4951TKK088A	METAL ASSEMBLY, TILT UNIT PORTRAIT & UPPER HINGE
a	332-068U	SCREW, PPB+3*8 (MSWR/FZMW1)
b	332-105G	SCREW, DRAWING, PVS+4*10(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. 11. 20.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
<b>MAIN BOARD</b>				
<b>CAPACITORS</b>				
		C201	OCC100CK41A	10PF 1608 50V 5% R/TP NP0
		C202	OCC100CK41A	10PF 1608 50V 5% R/TP NP0
		C203	OCC100CK41A	10PF 1608 50V 5% R/TP NP0
		C204	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C205	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C206	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C207	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C208	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C209	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C210	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C211	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C212	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C214	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C215	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C216	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C217	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C218	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C219	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C221	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C222	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C223	OCC180CK41A	18PF 1608 50V 5% R/TP NP0
		C224	OCC180CK41A	18PF 1608 50V 5% R/TP NP0
		C226	OCC680CK41A	68PF 1608 50V 5% R/TP NP0
		C227	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C228	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C229	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C230	OCC080CK11A	8PF 1608 50V 0.5 PF R/TP N
		C231	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C233	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C234	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C237	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C238	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C239	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C240	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C241	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C242	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C243	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C244	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C245	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C246	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C247	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C248	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C249	OCC220CK41A	22PF 1608 50V 5% R/TP NP0
		C254	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C255	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C256	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C257	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C258	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C259	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C261	OCC680CK41A	68PF 1608 50V 5% R/TP NP0
		C262	OCC680CK41A	68PF 1608 50V 5% R/TP NP0
		C269	OCK103CK51A	0.01UF 1608 50V 10% R/TP B

DATE: 2002. 11. 20.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		C270	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C271	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C401	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C402	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C403	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C404	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C405	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C501	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C502	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
		C503	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
		C504	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C505	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
		C506	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
		C507	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C508	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C509	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C512	OCC180CK41A	18PF 1608 50V 5% R/TP NP0
		C513	OCC180CK41A	18PF 1608 50V 5% R/TP NP0
		C514	OCH8106F611	10UF 16V M 85STD(CYL) R/TP
		C515	OCC680CK41A	68PF 1608 50V 5% R/TP NP0
		C516	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C703	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C706	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C707	OCC680CK41A	68PF 1608 50V 5% R/TP NP0
		C712	OCC101CK41A	100PF 1608 50V 5% R/TP NP0
		C713	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C715	OCH3105F946	1UF 16V Z F 2012 R/TP
		C731	OCC680CK41A	68PF 1608 50V 5% R/TP NP0
		C801	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C802	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C813	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C816	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C817	OCE107CF610	100UF SHL,SD 16V 20% BULK
		C818	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C819	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C820	OCE107CF610	100UF SHL,SD 16V 20% BULK
		C821	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C824	OCH8107F611	100UF 16V M 85STD(CYL) R/T
		C825	OCE107CF610	100UF SHL,SD 16V 20% BULK
		C826	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C827	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C828	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C829	OCK103CK51A	0.01UF 1608 50V 10% R/TP B
		C831	OCH8107F611	100UF 16V M 85STD(CYL) R/T
		C832	OCH8107F611	100UF 16V M 85STD(CYL) R/T
		C835	OCK104CK56A	0.1UF 1608 50V 10% R/TP X7
<b>DIODEs</b>				
		D701	0DSDI00038A	BAV99 DIODES R/TP SOT23 10
		D702	0DSDI00038A	BAV99 DIODES R/TP SOT23 10
		D703	0DSDI00038A	BAV99 DIODES R/TP SOT23 10
		D704	0DSDI00038A	BAV99 DIODES R/TP SOT23 10
		D705	0DSDI00038A	BAV99 DIODES R/TP SOT23 10

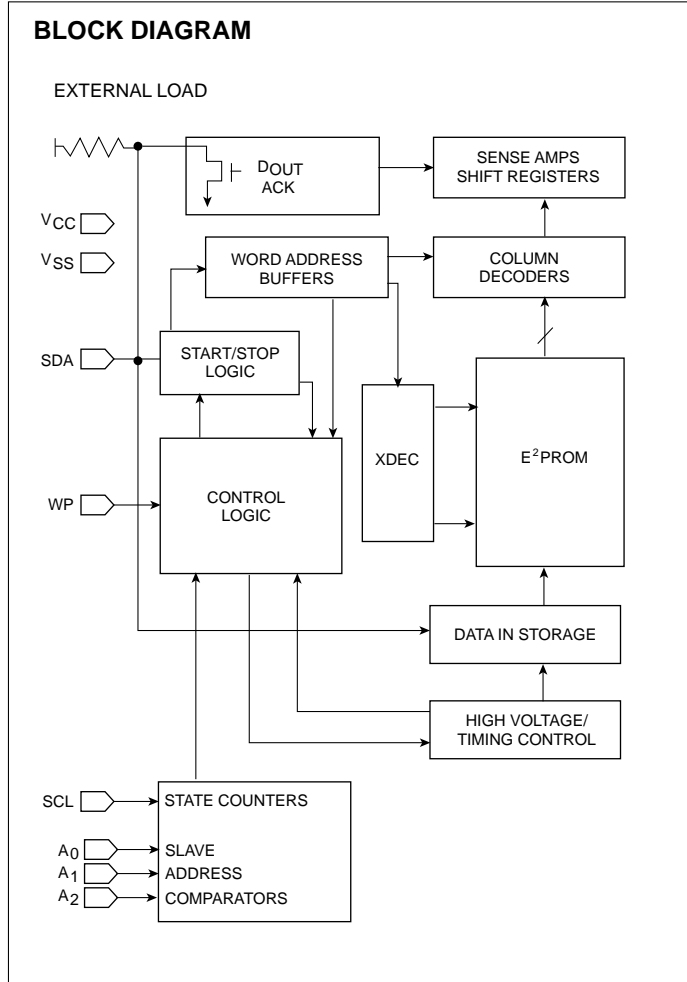
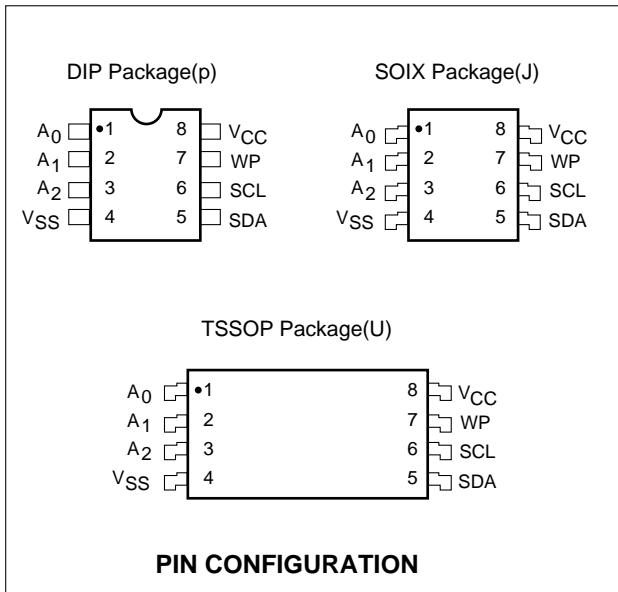


DATE: 2002. 11. 20.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		R807	0RJ1003D677	100K OHM 1/10 W 5% 1608 R/
		R813	0RJ1001D677	1K OHM 1/10 W 5% 1608 R/TP
		RA501	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/T
		RA502	0RHZTCZ001A	100 OHM 1/16 W 5% 3215 R/T
<b>OTHERs</b>				
		X201	6212AA2004B	HC-49U TXC 20.0MHZ +/- 30
		X501	6212AA2004A	HC-49U TXC 12.0MHZ +/- 30
<b>CONTROL BOARD</b>				
		LED1	0DLLT0148AA	LITEON LTST-C195KGJSKT R/T
		R1	0RJ4701D677	4.7K OHM 1/10 W 5% 1608 R/
		R2	0RJ4701D677	4.7K OHM 1/10 W 5% 1608 R/
		R3	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/
		R4	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/
		R5	0RJ3301D677	3.3K OHM 1/10 W 5% 1608 R/
		R6	0RJ3301D677	3.3K OHM 1/10 W 5% 1608 R/
		R7	0RJ9101D677	9.1K OHM 1/10 W 5% 1608 R/
		SW1	140-058E	SKHV10910B LGEC NON 12V 20
		SW2	140-058E	SKHV10910B LGEC NON 12V 20
		SW3	140-058E	SKHV10910B LGEC NON 12V 20
		SW4	140-058E	SKHV10910B LGEC NON 12V 20
		SW5	140-058E	SKHV10910B LGEC NON 12V 20
		SW6	140-058E	SKHV10910B LGEC NON 12V 20
		SW7	140-058E	SKHV10910B LGEC NON 12V 20
<b>USB BOARD</b>				
		C1	0CH8107F611	100UF 16V M 85STD(CYL) R/T
		C2	0CK103CK51A	0.01UF 1608 50V 10% R/TP B
		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 X7
		C23	0CH8107F611	100UF 16V M 85STD(CYL) R/T
		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/T
		C28	0CK103CK51A	0.01UF 1608 50V 10% R/TP B
		C31	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C32	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7
		C37	0CH8107F611	100UF 16V M 85STD(CYL) R/T
		C38	0CC470CK41A	47PF 1608 50V 5% R/TP NP0
		C39	0CC470CK41A	47PF 1608 50V 5% R/TP NP0
		D1	0DS181009AA	KDS181 TP KEC SOT-23 80V
		L4	6210TCE001P	HB-1S2012-121JT CERATECH 2
		L5	6210TCE001P	HB-1S2012-121JT CERATECH 2
		L13	6210TCE001B	HH-1H3216-500JT CERATEC 32
		L14	6210TCE001P	HB-1S2012-121JT CERATECH 2
		L15	6210TCE001P	HB-1S2012-121JT CERATECH 2
		L16	6210TCE001P	HB-1S2012-121JT CERATECH 2
		L17	6210TCE001P	HB-1S2012-121JT CERATECH 2
		L18	6210TCE001B	HH-1H3216-500JT CERATEC 32
		L19	6210TCE001P	HB-1S2012-121JT CERATECH 2
		L20	6210TCE001P	HB-1S2012-121JT CERATECH 2
		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/T
		R9	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/
		R19	0RJ1502D677	15K OHM 1/10 W 5% 1608 R/T

DATE: 2002. 11. 20.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
		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/T
		R24	0RJ1502D677	15K OHM 1/10 W 5% 1608 R/T
		R25	0RJ0000D677	0 OHM 1/10 W 5% 1608 R/TP
		R26	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/T
		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/T
		R32	0RJ1502D677	15K OHM 1/10 W 5% 1608 R/T
		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/
		R40	0RJ1501D677	1.5K OHM 1/10 W 5% 1608 R/
		R41	0RJ1002D677	10K OHM 1/10 W 5% 1608 R/T
		U1	0IRH033200A	BA033FP-E2 MOLD-3 TP REGUL
		U2	0IPRPT1007A	TUSB2036 TEXAS INSTRUMENT
		U3	0ITI204200B	TPS2042ADR TEXAS INSTRUMEN
		X1	6202TST001C	SX-1, SUNNY SMD, 6.0MHZ ,5
		ZD1	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD32
		ZD11	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD32
		ZD12	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD32
		ZD4	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD32
		ZD7	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD32
		ZD8	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD32

# PIN CONFIGURATION

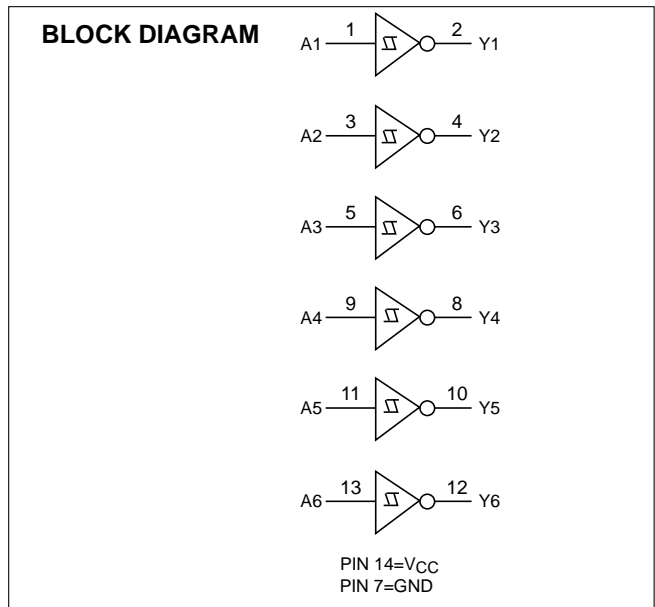
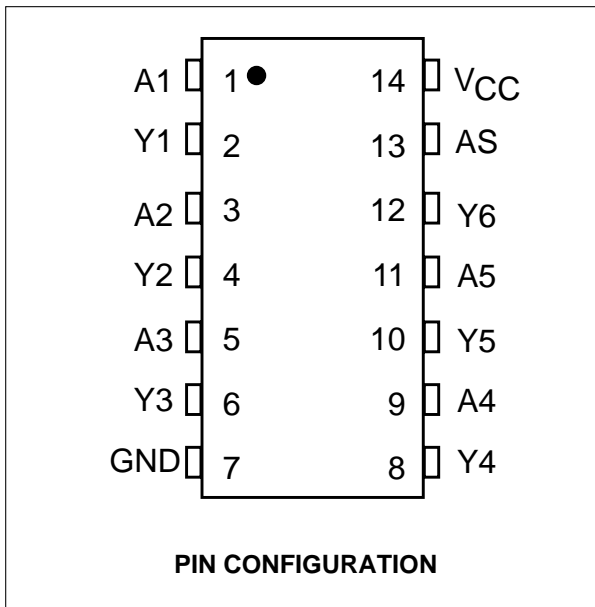
## CAT24WC02J-TE13 8P



### PIN FUNCTION

Pin Name	Function
A <sub>0</sub> , A <sub>1</sub> , A <sub>2</sub>	Device Address Inputs
SDA	Serial Data/Address
SCL	Serial Clock
WP	Write Protect
V <sub>cc</sub>	+1.8V to +6.0V power Supply
V <sub>ss</sub>	Ground

## MC74HCT14ADR2 14P

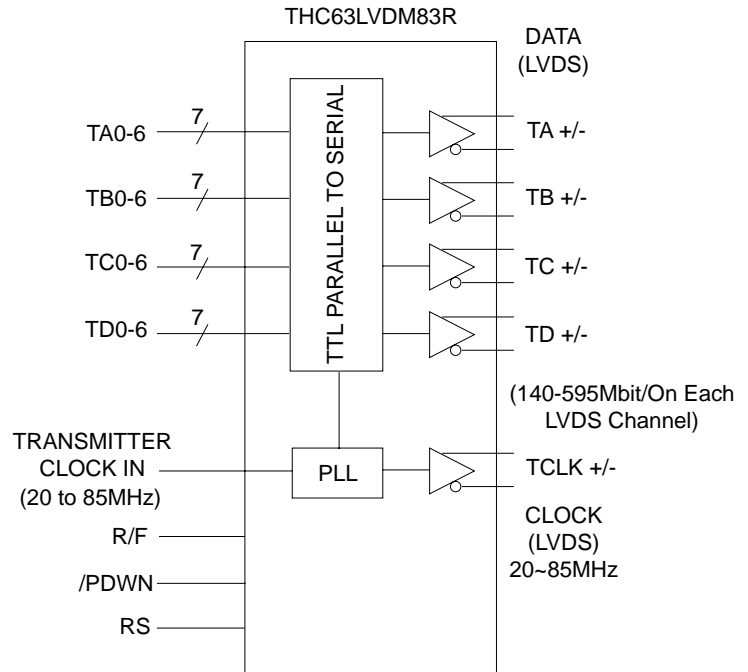


# THC63LVDM83R

## PIN CONFIGURATION

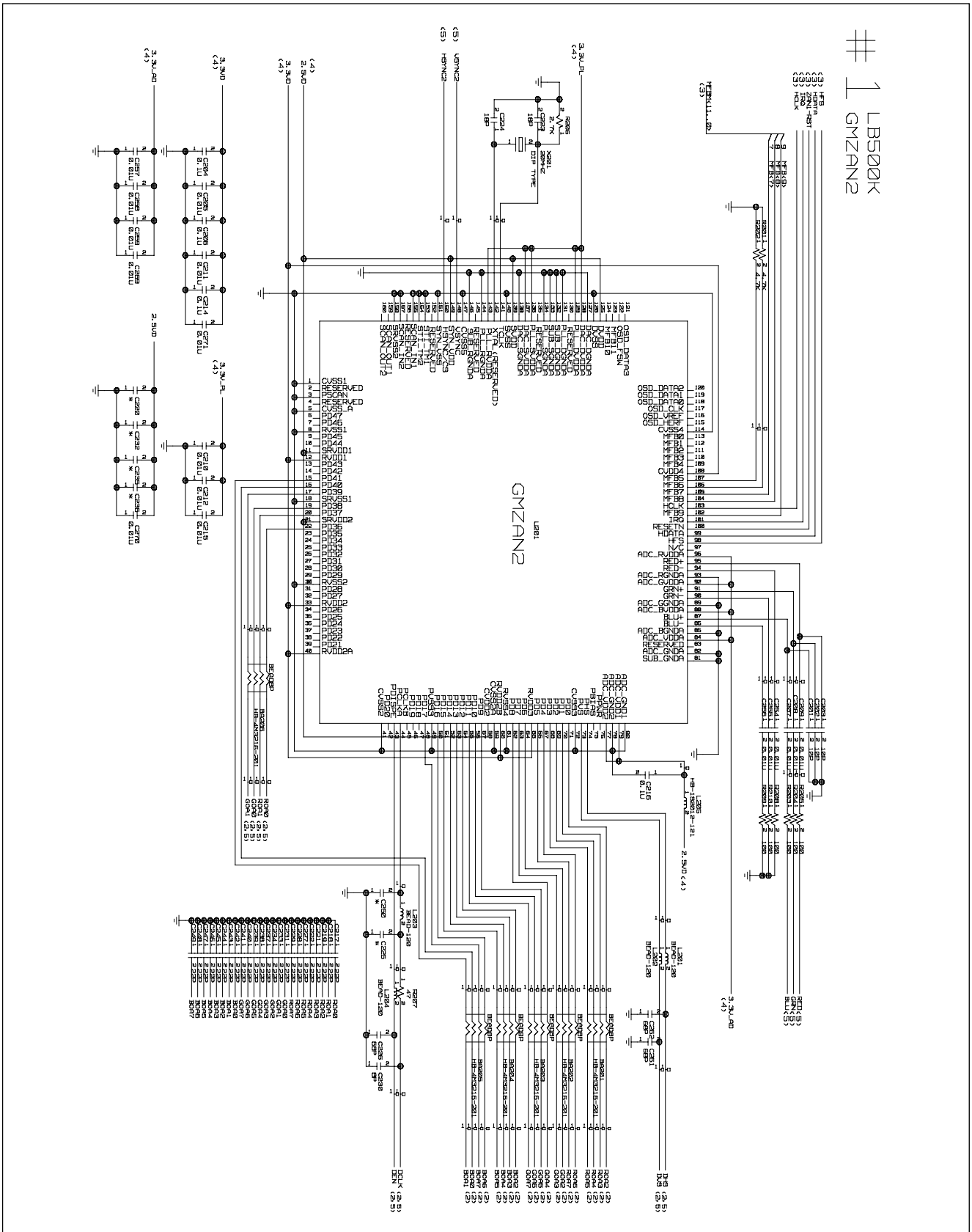
THC63LVDM83R	
RS	1
TD1	2
TA5	3
TA6	4
GND	5
TB0	6
TB1	7
TD2	8
VCC	9
TD3	10
TB2	11
TB3	12
GND	13
TB4	14
TB5	15
TD4	16
R/F	17
TD5	18
TB6	19
TC0	20
GND	21
TC1	22
TC2	23
TC3	24
TD6	25
VCC	26
TC4	27
TC5	28
56	TA4
55	TA3
54	TA2
53	GND
52	TA1
51	TA0
50	TD0
49	LVDS GND
48	TA-
47	TA+
46	TB-
45	TB+
44	LVDS VCC
43	LVDS GND
42	TC-
41	TC+
40	TCLK -
39	TCLK+
38	TD-
37	TD+
36	LVDS GND
35	PLL GND
34	PLL VCC
33	PLL GND
32	/PDWN
31	CLK IN
30	TC6
29	GND

## BLOCK DIAGRAM

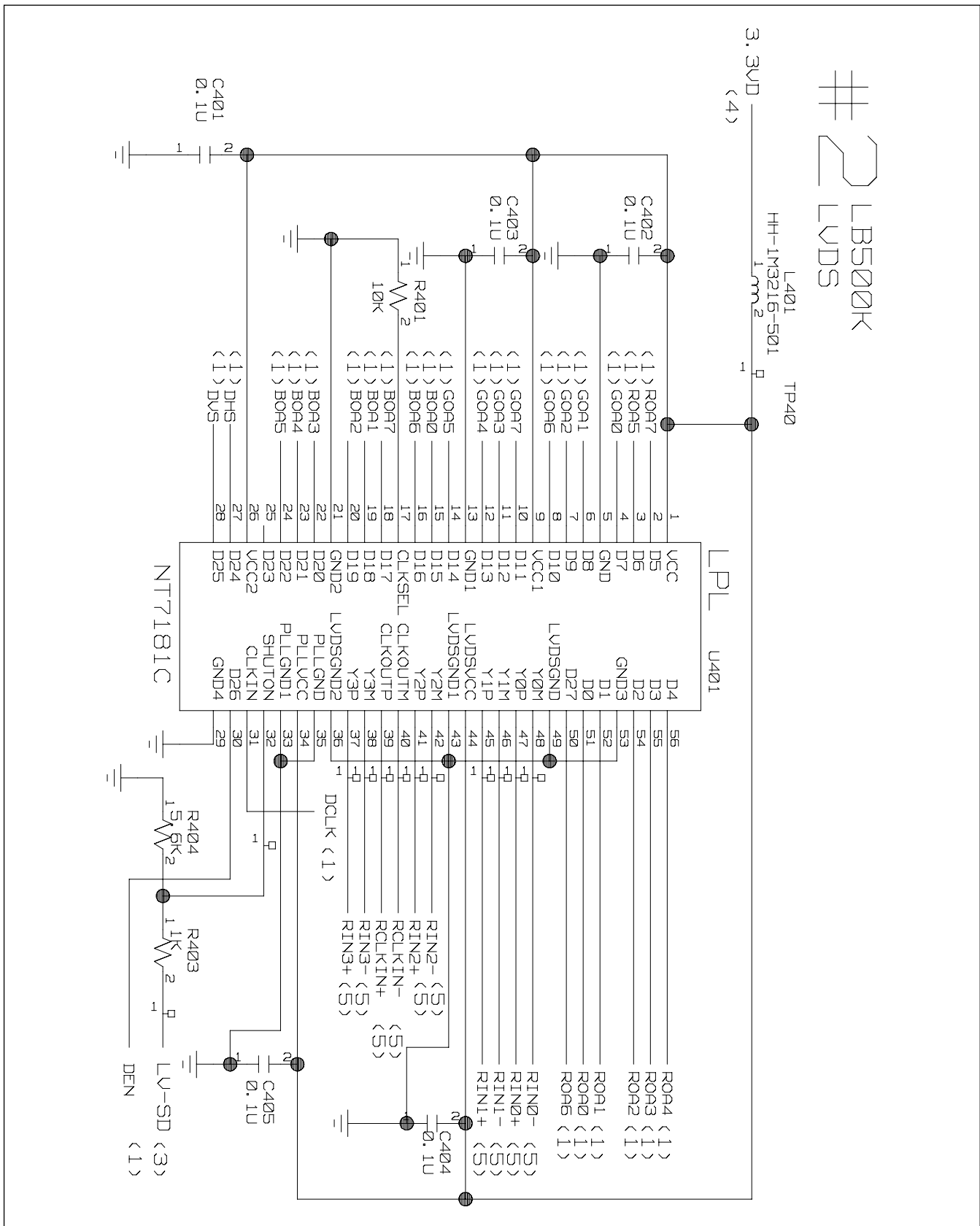


# SCHEMATIC DIAGRAM

## 1. GMZAN2



## 2. LVDS

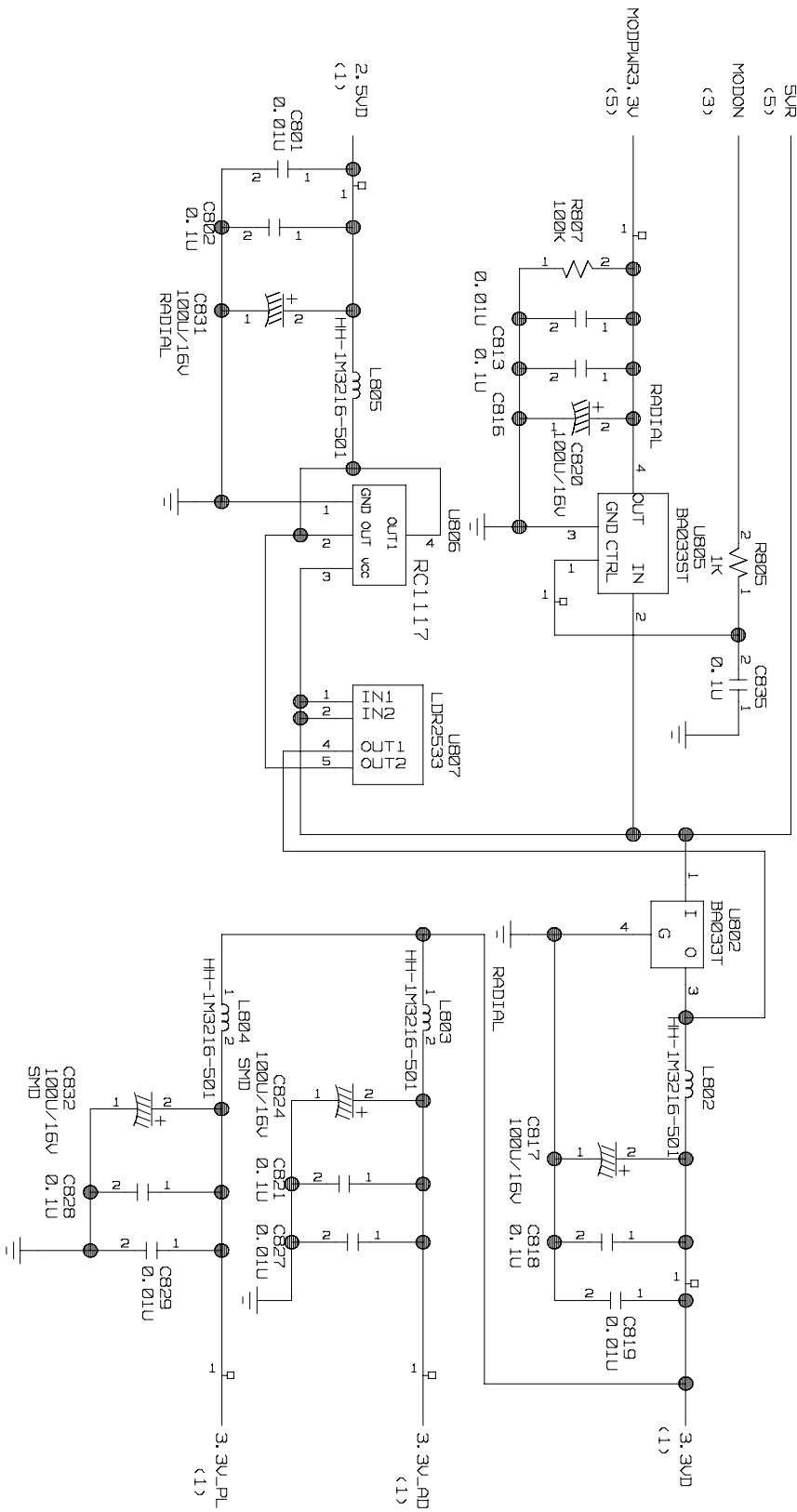






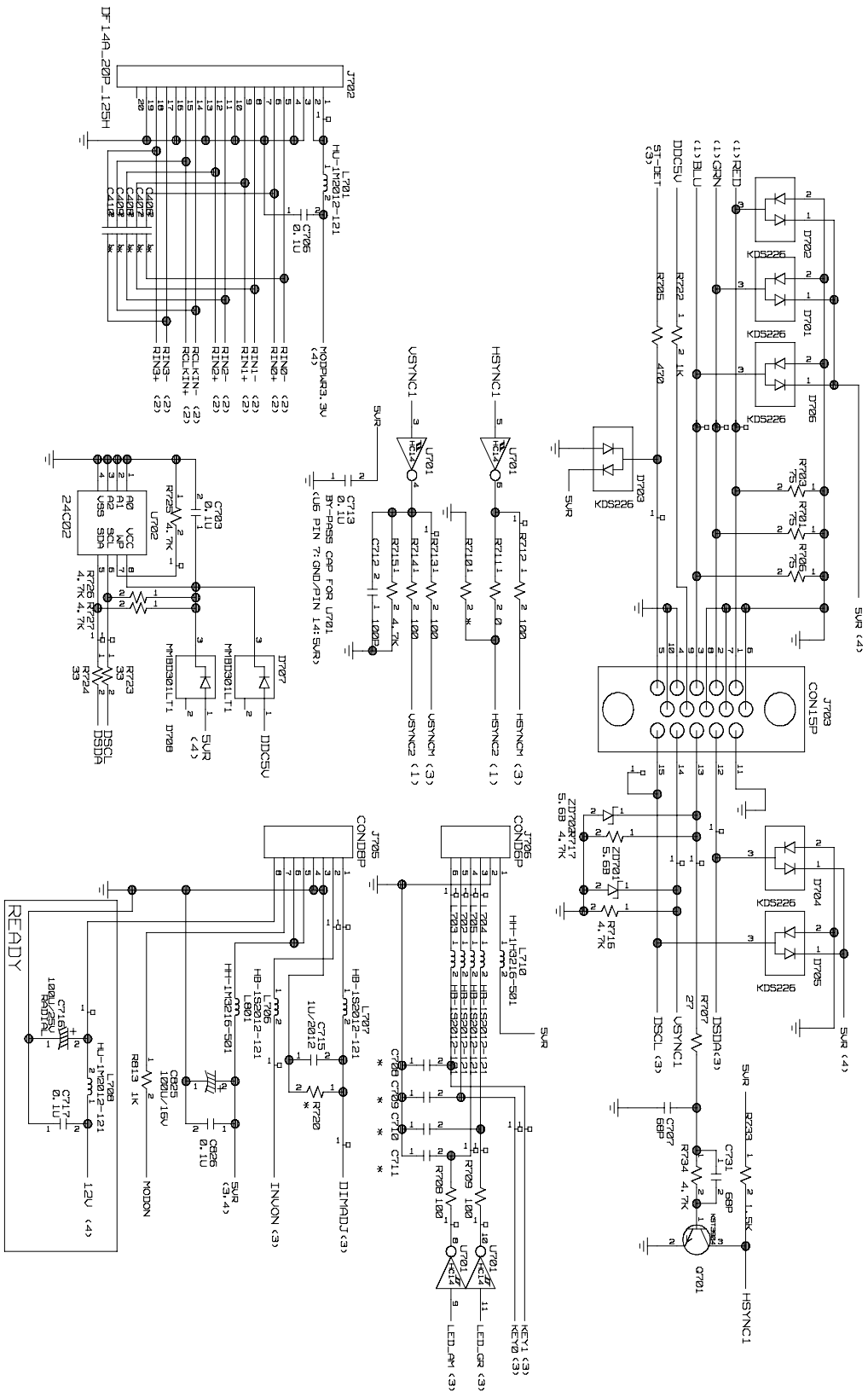
## 4. DC/DC BLOCK

# 4 LB500K  
POWER

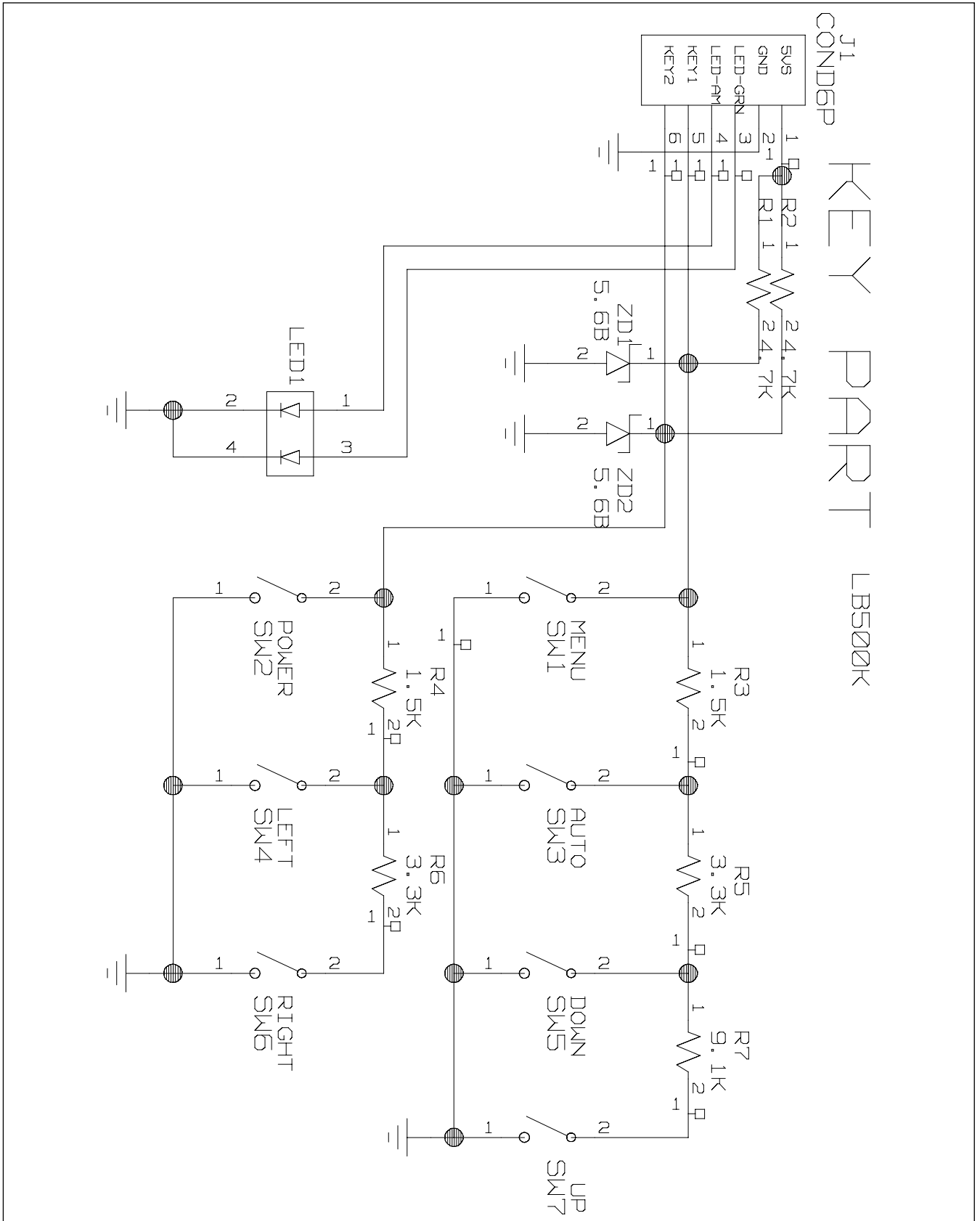


## 5. CONNECTOR & JACKS

### #5 LB500K CONNECTOR & JACKS



## 6. KEY PART





P/NO : 3828TSL083P

Nov. 2002  
Printed in Korea

