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COLOR MONITOR SERVICE MANUAL

CHASSIS NO. : CL-42

FACTORY MODEL: LB700G

MODEL: FLATRON L1710S (LB700G-GU)

FLATRON L1710S (LB700G-GD)

*() 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 SXGA LCD
 Size : 17 inch
 Pixel Pitch : 0.264 (H) x 0.264 (V)
 Color Depth : 6-bit + FRC(16.2M)
 Electrical Interface : LVDS
 Surface Treatment : Anti-Glare, Polarizer Hardness
 Operating Mode : Normally White
 Backlight Unit : 4-CCFL (Cold Cathode Fluorescent Lamp)

2. OPTICAL CHARACTERISTICS

2-1. Viewing Angle by Contrast Ratio ≥ 10
(AU Module)
 Left : -55° min., -70°(Typ) Right : +55° min., +70°(Typ)
 Top : +55° min., +70°(Typ) Bottom : -55° min., -70°(Typ)
(Hydis Module)
 Left : -60° min., -65°(Typ) Right : +60° min., +65°(Typ)
 Top : +40° min., +45°(Typ) Bottom : -60° min., -65°(Typ)

2-2. Luminance : 200(min), 250(Typ)
 2-3. Contrast Ratio : 200(min), 450(Typ)

3. SIGNAL (Refer to the Timing Chart)

3-1. Sync Signal
 • Type : Separate Sync,
 SOG (Sync On Green)
 Composite Sync

3-2. Video Input Signal
 1) Type : R, G, B Analog
 2) Voltage Level : 0~0.7 V
 a) Color 0, 0 : 0 Vp-p
 b) Color 7, 0 : 0.35 Vp-p
 c) Color 15, 0 : 0.7 Vp-p
 3) Input Impedance : 75 Ω

3-3. Operating Frequency
 Horizontal : 30 ~ 83kHz (Digital: 71kHz)
 Vertical : 56 ~ 75Hz

4. Max. Resolution

Analog : 1280 x 1024 / 75Hz

5. POWER SUPPLY

5-1. Power : AC 100~240V, 50/60Hz , 1.0A

5-2. Power Consumption

MODE	HV SYNC	VIDEO	POWER CONSUMPTION	LED COLOR
POWER ON (NORMAL)	ON/ON	ACTIVE	less than 40 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 SW OFF	-	-	less than 1 W (@120V AC)	OFF

6. ENVIRONMENT

6-1. Operating Temperature: 10°C~35°C (50°F~95°F)
 (Ambient)
 6-2. Relative Humidity : 10%~80%
 (Non-condensing)
 6-3. MTBF : 50,000 Hours(Min)

7. DIMENSIONS (with TILT/SWIVEL)

Width : 370 mm (14.57")
 Depth : 222.5 mm (8.76")
 Height : 421 mm (16.57")

8. WEIGHT (with TILT/SWIVEL)

Net. Weight : 6.0 kg (13.23 lbs)
 Gross Weight : 7.6 kg (16.76 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 \triangle 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.)

\triangle WARNING

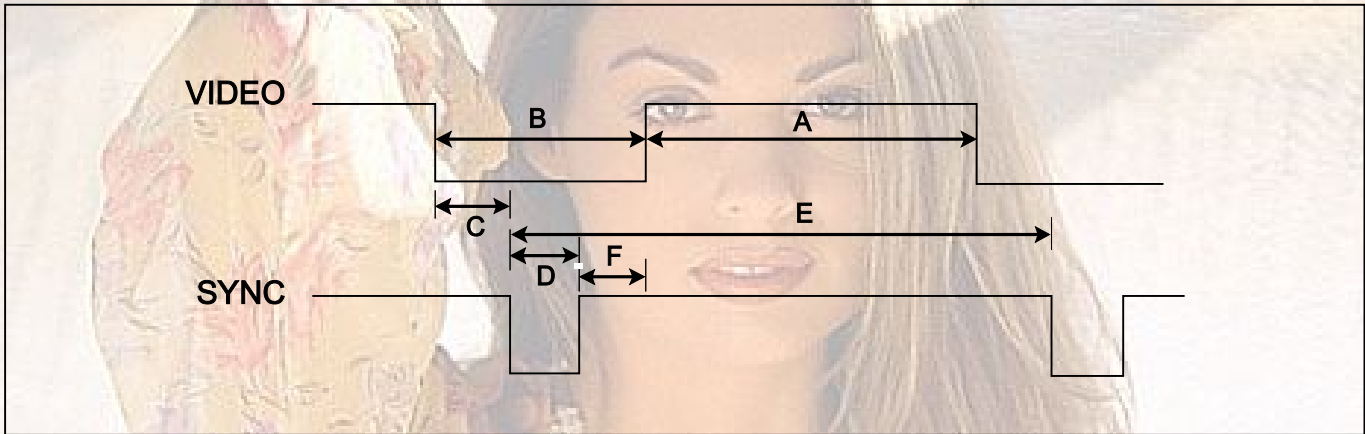
BE CAREFUL ELECTRIC SHOCK!

- 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.

\triangle CAUTION

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

TIMING CHART



<< Dot Clock (MHz), Horizontal Frequency (kHz), Vertical Frequency (Hz), Horizontal etc... (μs), Vertical etc... (ms) >>

Mode	HV Sort	Sync Polarity	Dot Clock	Frequency	Total Period (E)	Video Active Time (A)	Front Porch (C)	Sync Duration (D)	Back Porch (F)	Resolution
1	H	+	25.175	31.469	800	640	16	96	48	640x350 70Hz
	V	-		70.8Hz	449	350	37	2	60	
2	H	-	28.321	31.468	900	720	18	108	54	720x400 70Hz
	V	+		70.09	449	400	12	2	35	
3	H	-	25.175	31.469	840	640	16	96	48	640x480 60Hz
	V	-		59.94	525	480	10	2	33	
4	H	-	31.5	37.5	840	640	16	64	120	640x480 75Hz
	V	-		75	500	480	1	3	16	
5	H	+	40.0	37.879	1056	800	40	128	88	800x600 60Hz
	V	+		60.317	628	600	1	4	23	
6	H	+	49.5	46.875	1056	800	16	80	160	800x600 75Hz
	V	+		75.0	625	600	1	3	21	
7	H	+/-	57.283	49.725	1152	832	32	64	224	832x624 75Hz
	V	+/-		74.55	667	624	1	3	39	
8	H	-	65.0	48.363	1344	1024	24	136	160	1024x768 60Hz
	V	-		60.0	806	768	3	6	29	
9	H	-	78.75	60.123	1312	1024	16	96	176	1024x768 75Hz
	V	-		75.029	800	768	1	3	28	
10	H	+/-	100.0	68.681	1456	1152	32	128	144	1152x870 75Hz
	V	+/-		75.062	915	870	3	3	39	
11	H	+/-	92.978	61.805	1504	1152	18	134	200	1152x900 65Hz
	V	+/-		65.96	937	900	2	4	31	
12	H	+	108.0	63.981	1688	1280	48	112	248	1280x1024 60Hz
	V	+		60.02	1066	1024	1	3	38	
13	H	+	135.0	79.976	1688	1280	16	144	248	1280x1024 75Hz
	V	+		75.035	1066	1024	1	3	38	

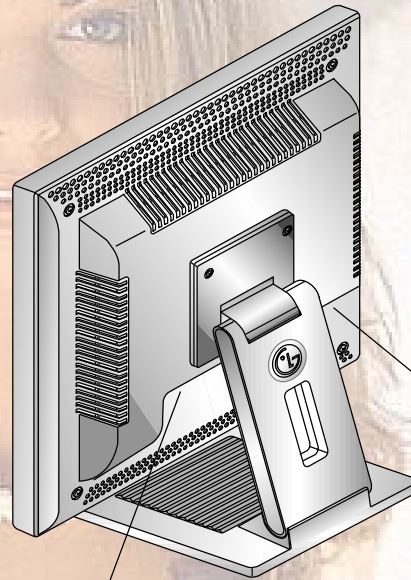
OPERATING INSTRUCTIONS

FRONT VIEW



See Front Control Panel

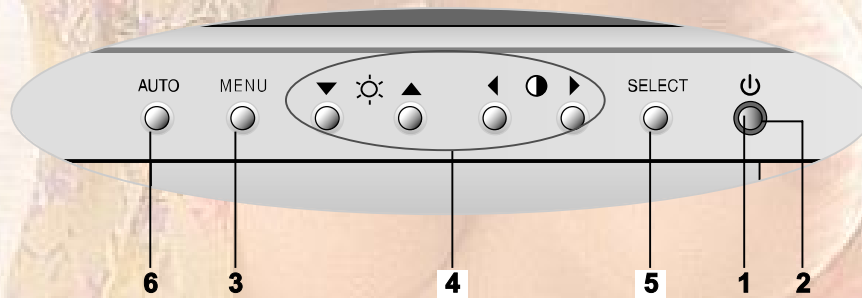
REAR VIEW



D-Sub Signal Connect

Power Connect

Front Control Panel



1. Power ON/OFF Button

Use this button to turn the monitor on or off.

2. Power Indicator

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

3. MENU Button

Use these buttons to enter or exit the On Screen Display.

4. Button

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

5. SELECT Button

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

6. AUTO Button

Use this button to enter a selection in the on screen display.

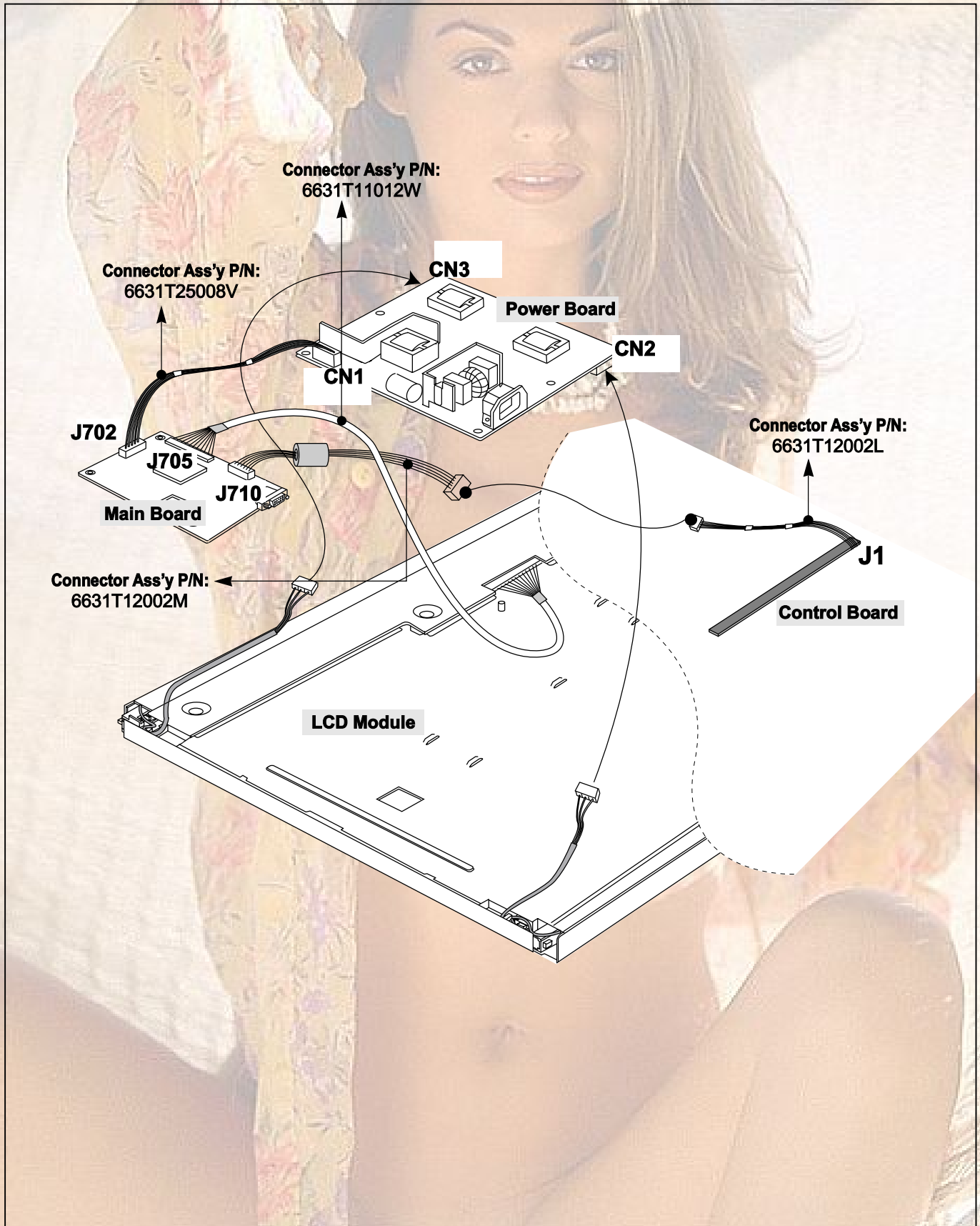
* AUTO adjustment function

TO the **AUTO** button before using OSD menu. This button is for the automatic adjustment of the screen position, clock and phase.

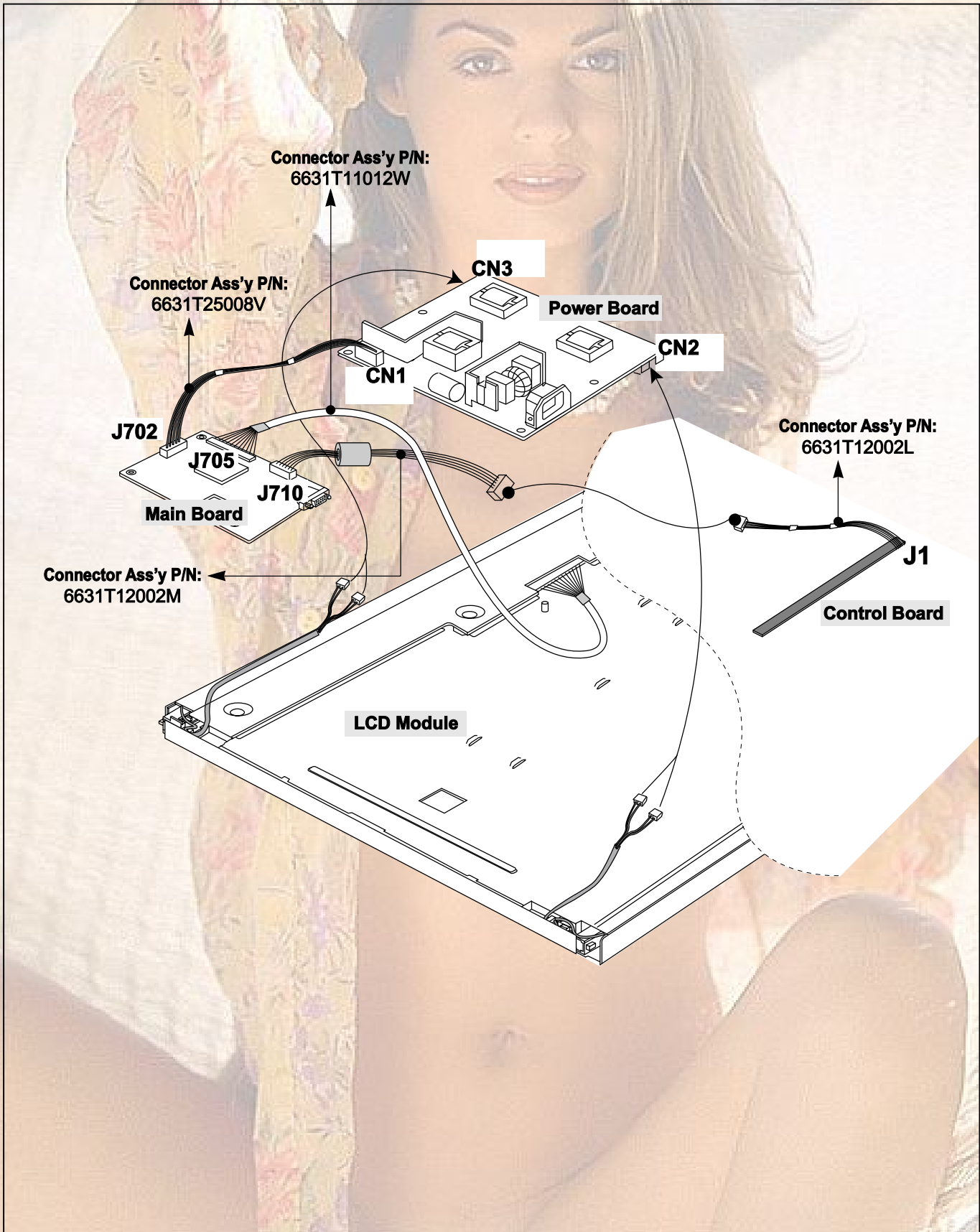
Note: Some signal from some graphics boards may not function properly. **If the results are unsatisfactory**, adjust your monitor's Position, Clock and Phase manually.

PROCESSING
AUTO CONFIGURATION

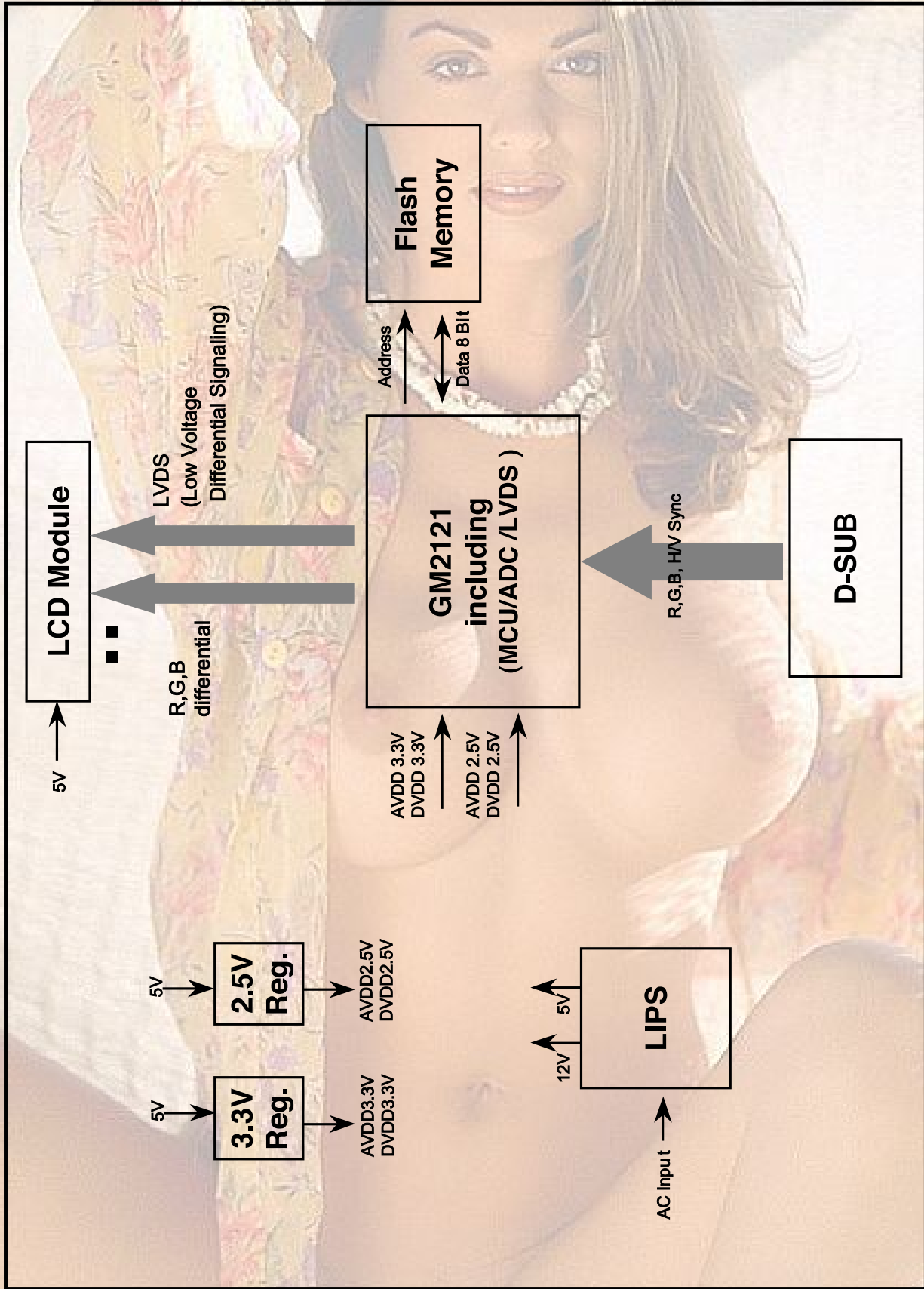
WIRING DIAGRAM (AU Module)



WIRING DIAGRAM (Hydis Module)



BLOCK DIAGRAM





DESCRIPTION OF BLOCK DIAGRAM

1. Video Controller Part & Display Data Transmitter 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 135MHz.

This part consists of the Scaler, Flash-ROM IC which stores program data, Reset IC.

The Scaler gets the video signal converted analog to digital, interpolates input to 1280 x 1024 resolution signal and outputs 8-bit R, G, B signal to transmitter.

Especially pre-amp / ADC / Video controller/ Transmitter are merged to one chip 'Gm2121' by Genesis.

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

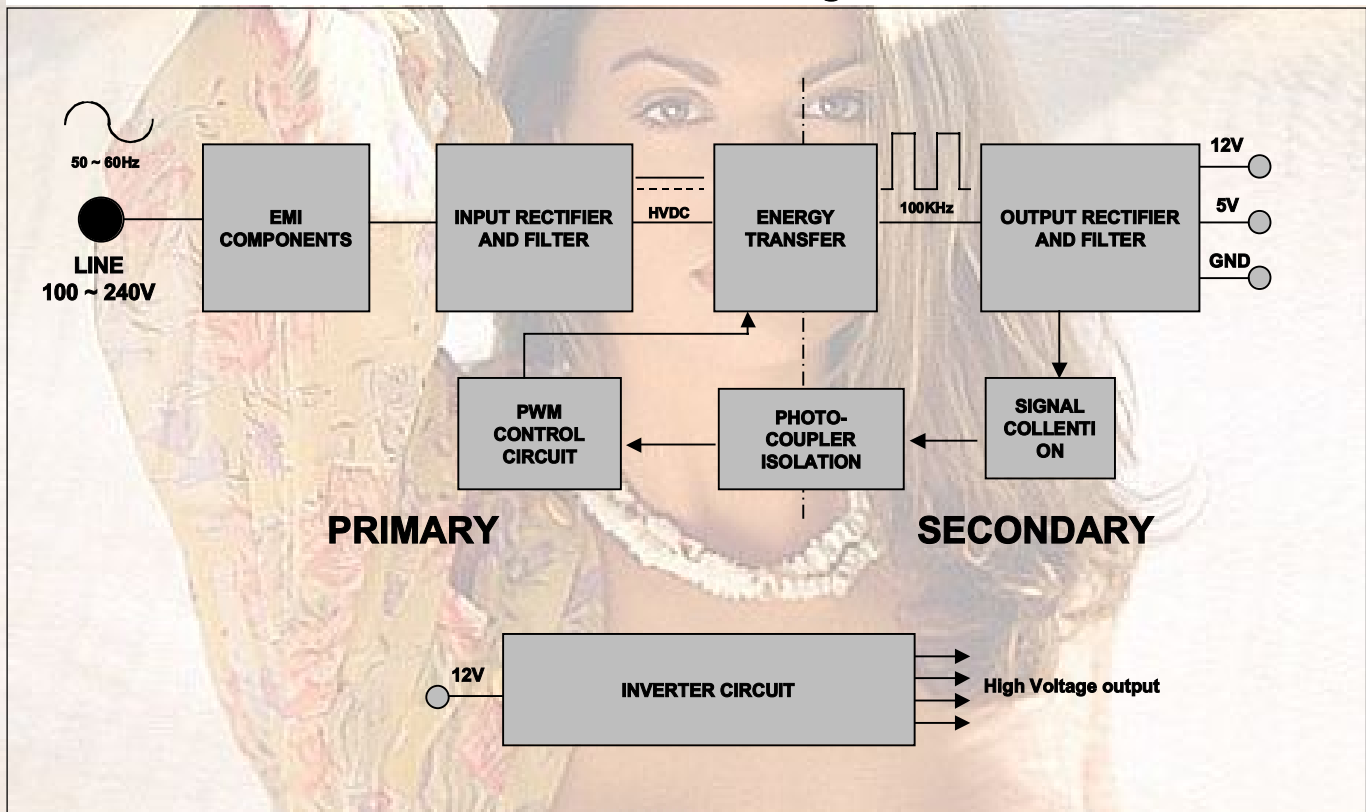
2. Power Part

This part consists of the one 3.3V and one 2.5 regulators to convert power which is provided 5V in LIPS Board.

5V is provided for LCD Panel.

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

LIPS Board Block Diagram



Operation description_LIPS

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 achieve the stabilized 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.

7. Inverter

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

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.

1. Adjustment Start

- 1) Display any pattern at any Mode.
- 2) Run alignment program for LB700G on the IBM compatible PC.
- 3) Select EEPROM → Init → Initialize command and Enter.
- 4) This will make all data to default state.
- 5) Select COLOR → PRESET START command and Enter.

2. Adjustment for White Balance

- 1) Display Black pattern at SXGA/60Hz.
- 2) Select COLOR → BIAS CALIBRATION command and Enter.
- 3) No attempt to manually adjust, BIAS data is automatically adjusted and saved to the EEPROM.
- 4) Display Full White pattern at SXGA/60Hz.
- 5) Select GAIN CALIBRATION command and Enter.
- 6) 6500K and 9300K are automatically adjusted and saved to the EEPROM.
- 7) Select COLOR → PRESET END command and Enter.

3. Adjustment for EDID

- 1) Use this procedure only when there is some problem on EDID data.
- 2) Connect the D-sub cable.
- 3) Select EDID → Write EDID[A0] command and Enter.

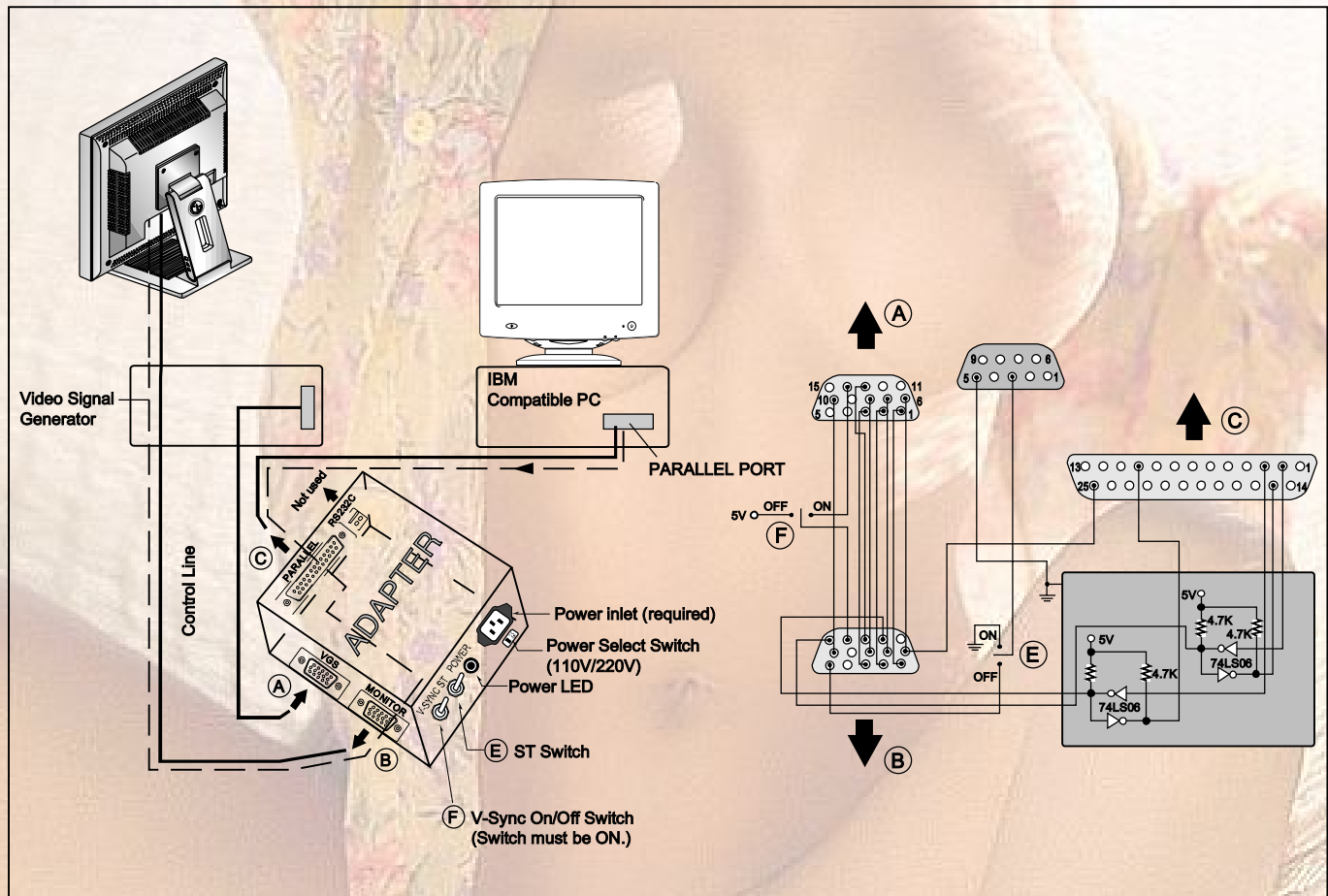
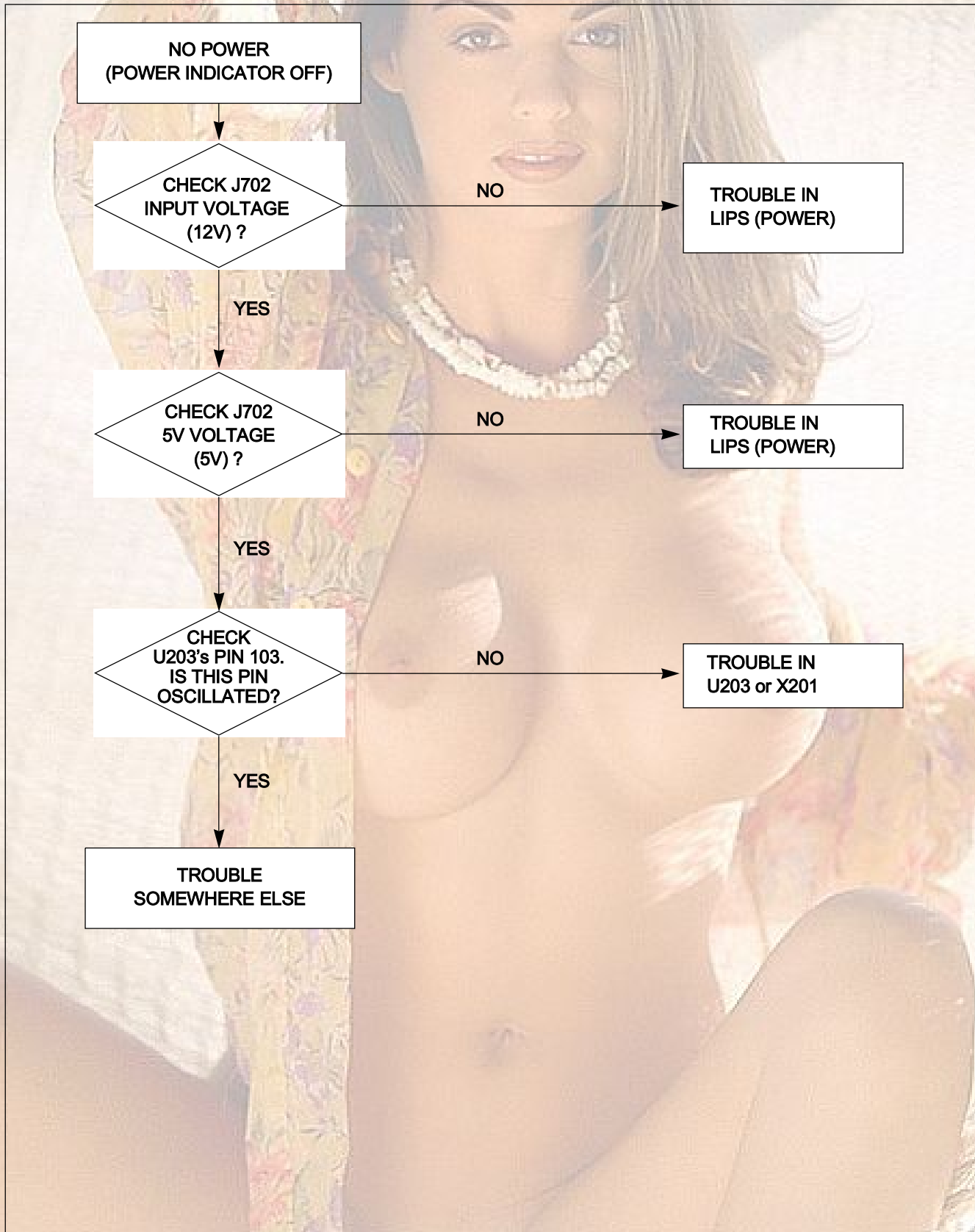


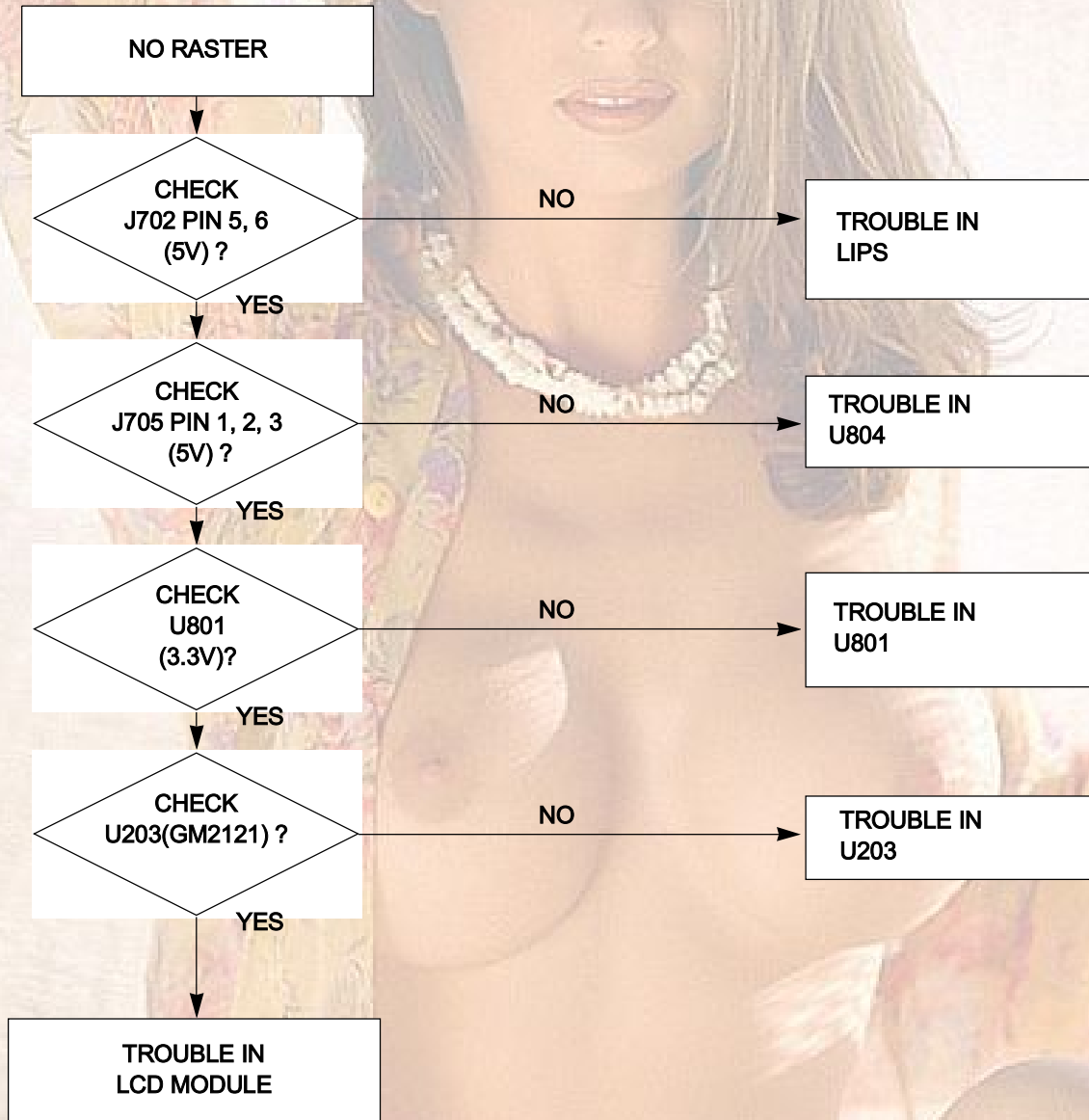
Figure 1. Cable Connection

TROUBLESHOOTING GUIDE

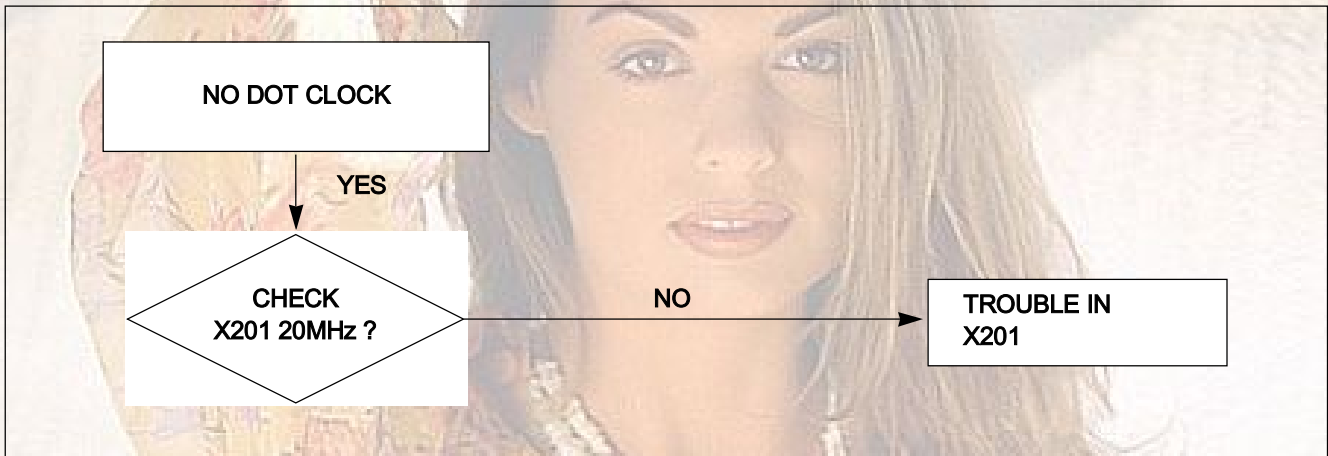
1. NO POWER



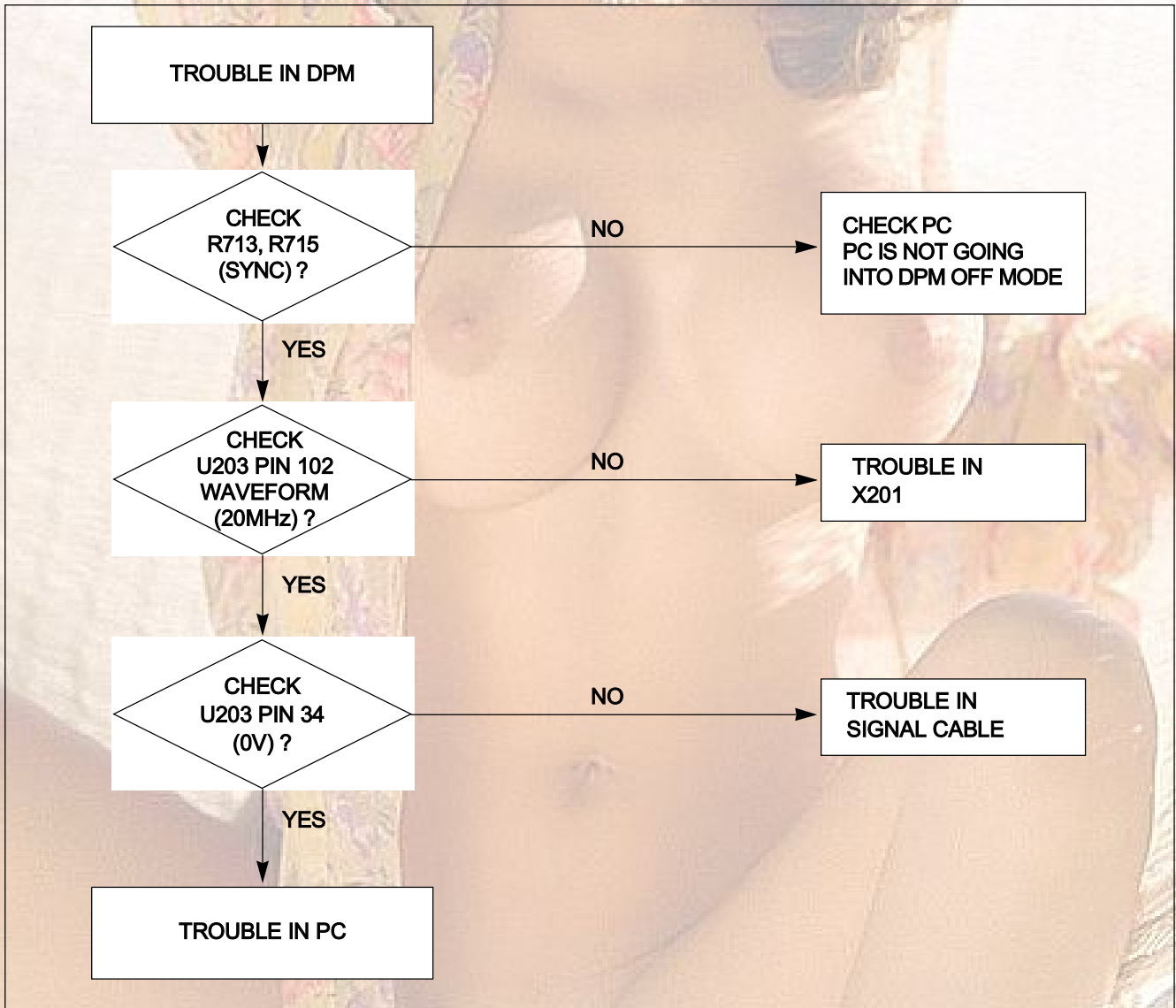
2. NO RASTER



3. NO CLOCK (CLOCK GENERATOR)

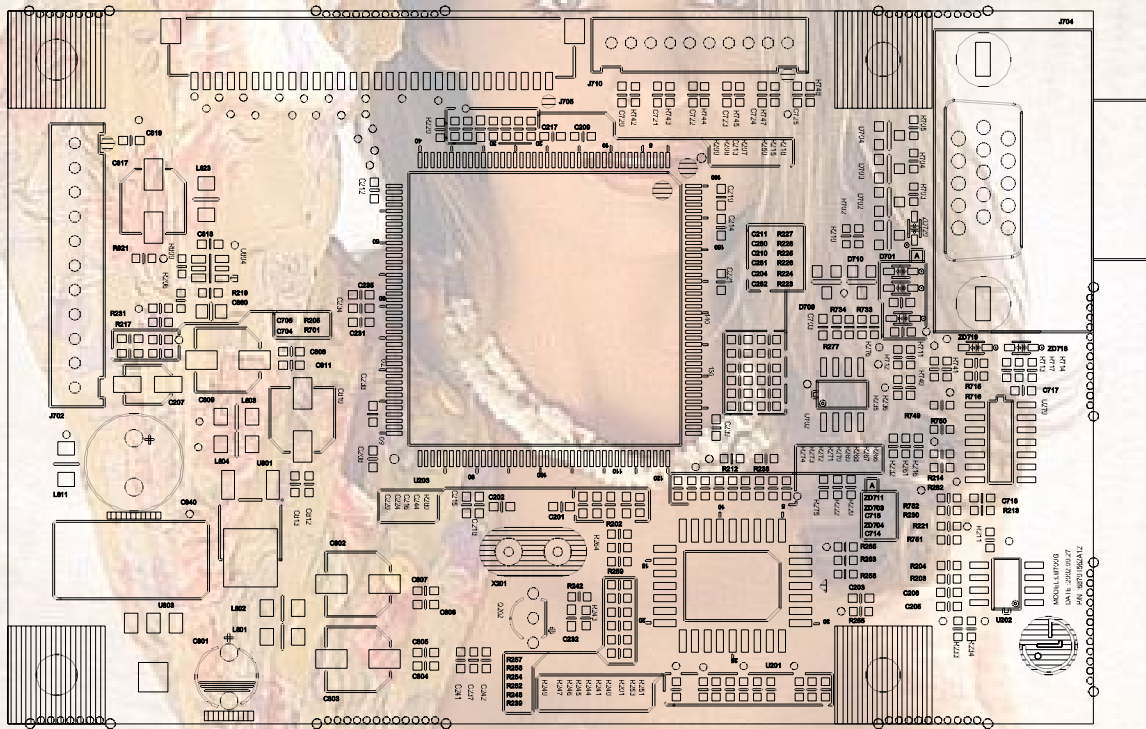


4. TROUBLE IN DPM

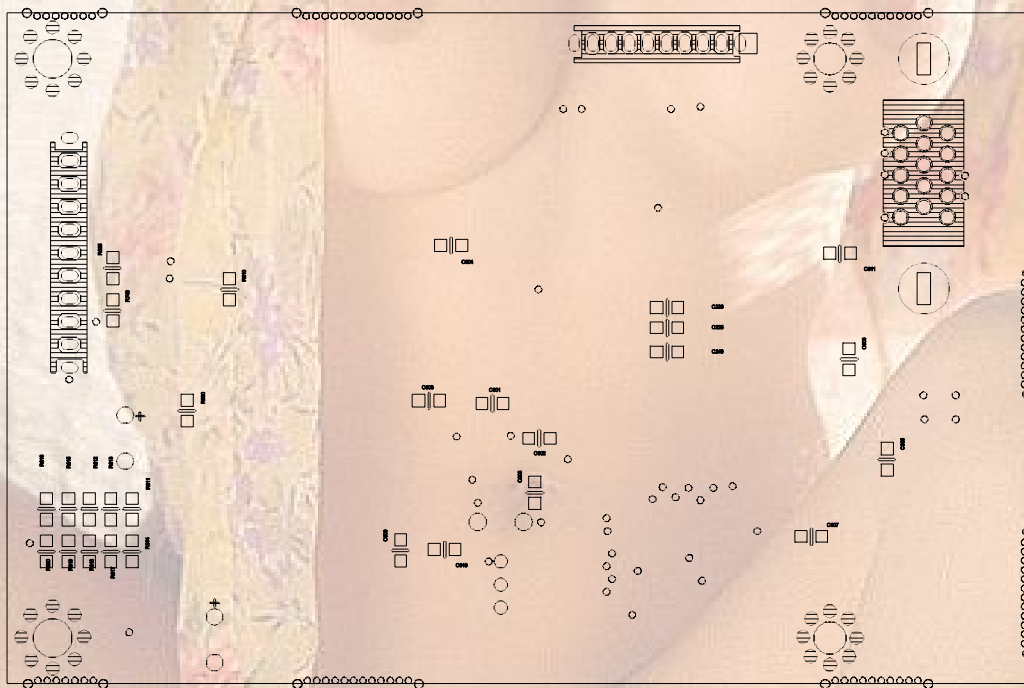


PRINTED CIRCUIT BOARD

1. MAIN BOARD (Component Side)

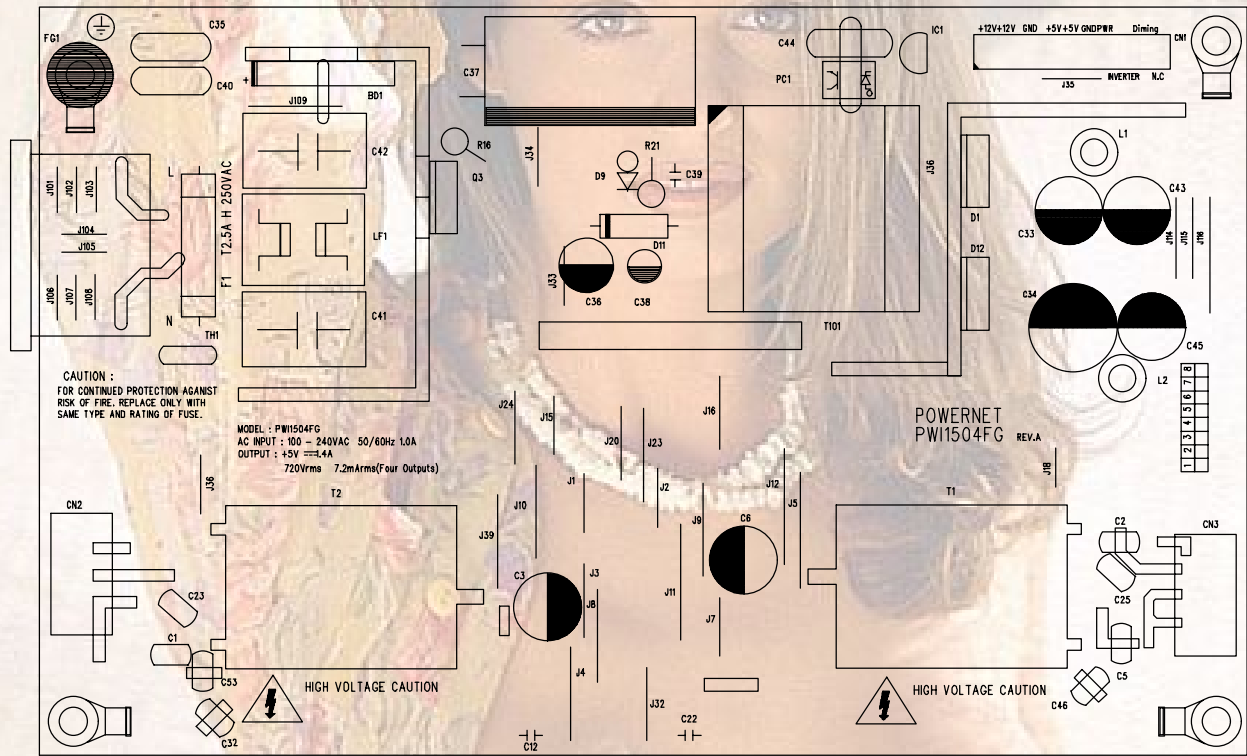


2. MAIN BOARD (Solder Side)

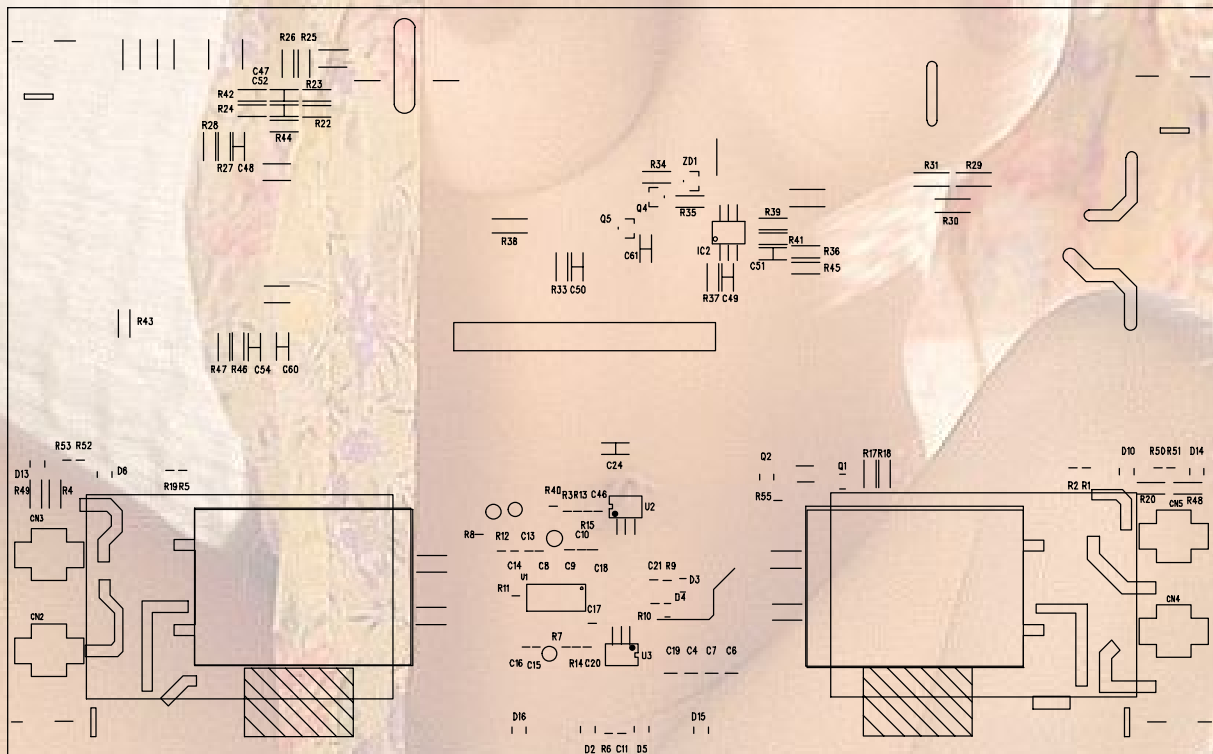


To apply the AU Module.

3. ADAPTER BOARD (Component Side)

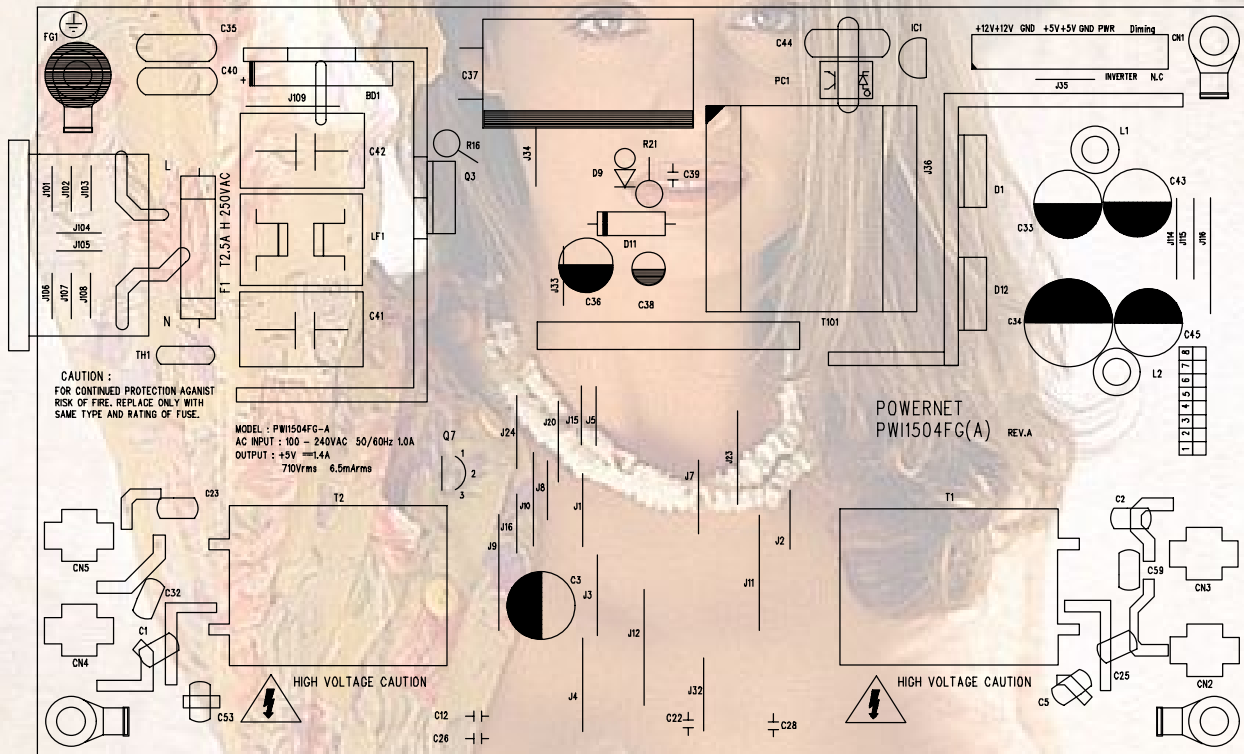


4. ADAPTER BOARD (Solder Side)

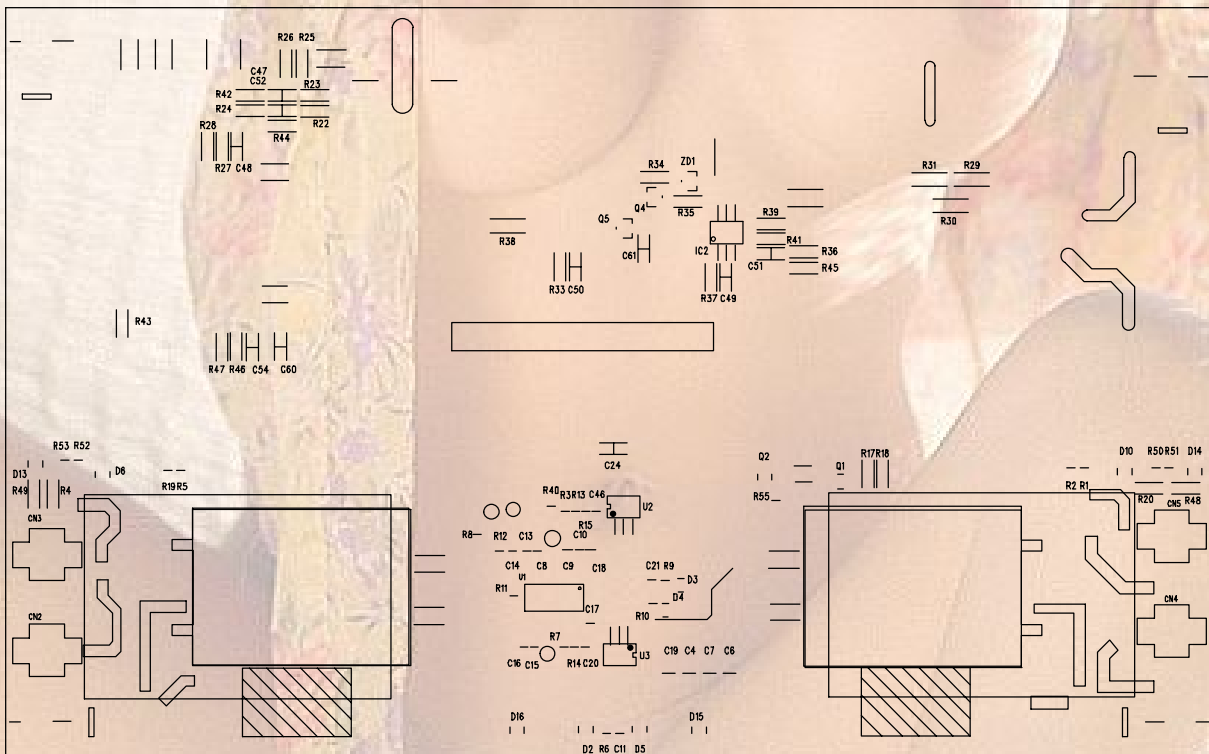


To apply the HYDIS Module.

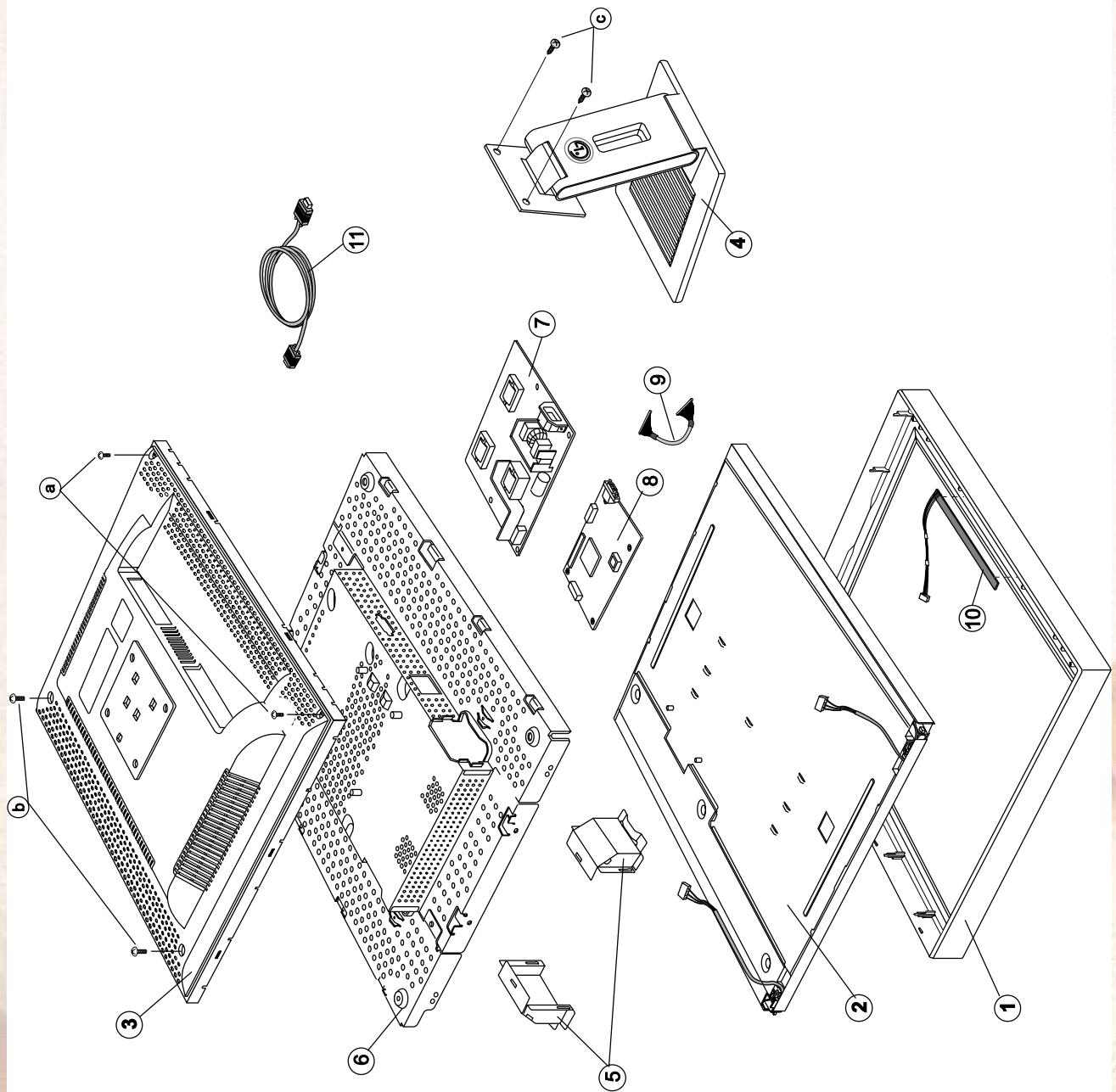
5. ADAPTER BOARD (Component Side)



6. ADAPTER BOARD (Solder Side)



EXPLODED VIEW



EXPLODED VIEW PARTS LIST

Ref. No.	Part No.	Description
1	3091TKL053B	CABINET ASSEMBLY, LB700G BRAND 3090TKL053A HF350U
2	6304FHD005A	LCD(LIQUID CRYSTAL DISPLAY) HT17E12-100 HYUNDAI TFT COLOR LVDS TYPE SSM
	6304FAU005A	LCD(LIQUID CRYSTAL DISPLAY) M170EN05 AU TFT COLOR 17.0" SXGA LVDS SMM
3	3809TKL035B	BACK COVER ASSEMBLY, LB700G 3808TKL039A HF350U
4	3043TKK091E	TILT SWIVEL ASSEMBLY LM805L -HIPS NO USB
5	4814TKK231A	SHIELD INVERTER LAMP WIRE, LB700K
6	4951TKS094D	METAL ASSEMBLY, FRAME LB700G (HYUNDAI) (LB700G-GD)
	4951TKS094B	METAL ASSEMBLY, FRAME LB700G(AU) (LB700G-GU)
7	6634B00055B	ADAPTER, AC-DC, PWI1504FG-A 5V/12A 1A/1.2A LIPS FOR HYDIS LB700K (LB700G-GD)
	6634B00055A	ADAPTER, AC-DC, PWI1504FG 5V/12A 1A/1.2A POWERNET LIPS FOR LB700K (LB700G-GU)
8	3313TL7008A	MAIN TOTAL ASSEMBLY LB700G.ASRDG BRAND CL-43
9	6631T11012W	CONNECTOR ASSEMBLY, 30P H-H 200MM UL20276 LG708G
10	6871TST321A	PWB(PCB) ASSEMBLY, SUB, LB800K CONTROL TOTAL BRAND CL-42
11	6850TD9001A	CABLE, D-SUB UL 2990-9C(7.5) DT 1870MM GRAY(85964) BRAND DM
a	1SZZTMF008A	SCREW, DRAWING, D3.0 L6.0 MSWR/FZMY
b	332-113S	SCREW, DRAWING, D3.0 L12.0 MSWR/BK
c	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. 10. 16.				
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION
MAIN BOARD				
CAPACITORS				
		C201	0CC120CK41A	12PF 1608 50V 5% R/TP NPO
		C202	0CC120CK41A	12PF 1608 50V 5% R/TP NPO
		C203	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C204	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C205	0CC101CK41A	100PF 1608 50V 5% R/TP NPO
		C206	0CC101CK41A	100PF 1608 50V 5% R/TP NPO
		C207	0CH8106F611	10UF 16V M 85STD(CYL) R/TP
		C208	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C209	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C210	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C211	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C212	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C213	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C214	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C215	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C216	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C217	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C218	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C219	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C220	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C221	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C224	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C225	0CH3104K566	0.1UF 50V 10% X7R 2012 R/TP
		C231	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C232	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C234	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C235	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C236	0CH3104K566	0.1UF 50V 10% X7R 2012 R/TP
		C237	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C238	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C239	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C240	0CH3104K566	0.1UF 50V 10% X7R 2012 R/TP
		C241	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C242	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C244	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C280	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C281	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C282	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
		C703	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C704	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C706	0CC221CK41A	220PF 1608 50V 5% R/TP NPO
		C714	0CC101CK41A	100PF 1608 50V 5% R/TP NPO
		C715	0CC101CK41A	100PF 1608 50V 5% R/TP NPO
		C717	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
		C718	0CC101CK41A	100PF 1608 50V 5% R/TP NPO
		C720	0CC471CK41A	470PF 1608 50V 5% R/TP NPO
		C721	0CC471CK41A	470PF 1608 50V 5% R/TP NPO
		C722	0CC471CK41A	470PF 1608 50V 5% R/TP NPO
		C723	0CC471CK41A	470PF 1608 50V 5% R/TP NPO
		C724	0CC471CK41A	470PF 1608 50V 5% R/TP NPO
		C725	0CC471CK41A	470PF 1608 50V 5% R/TP NPO
		C801	0CE107EF638	100UF KMG 16V M FM5 TP 5

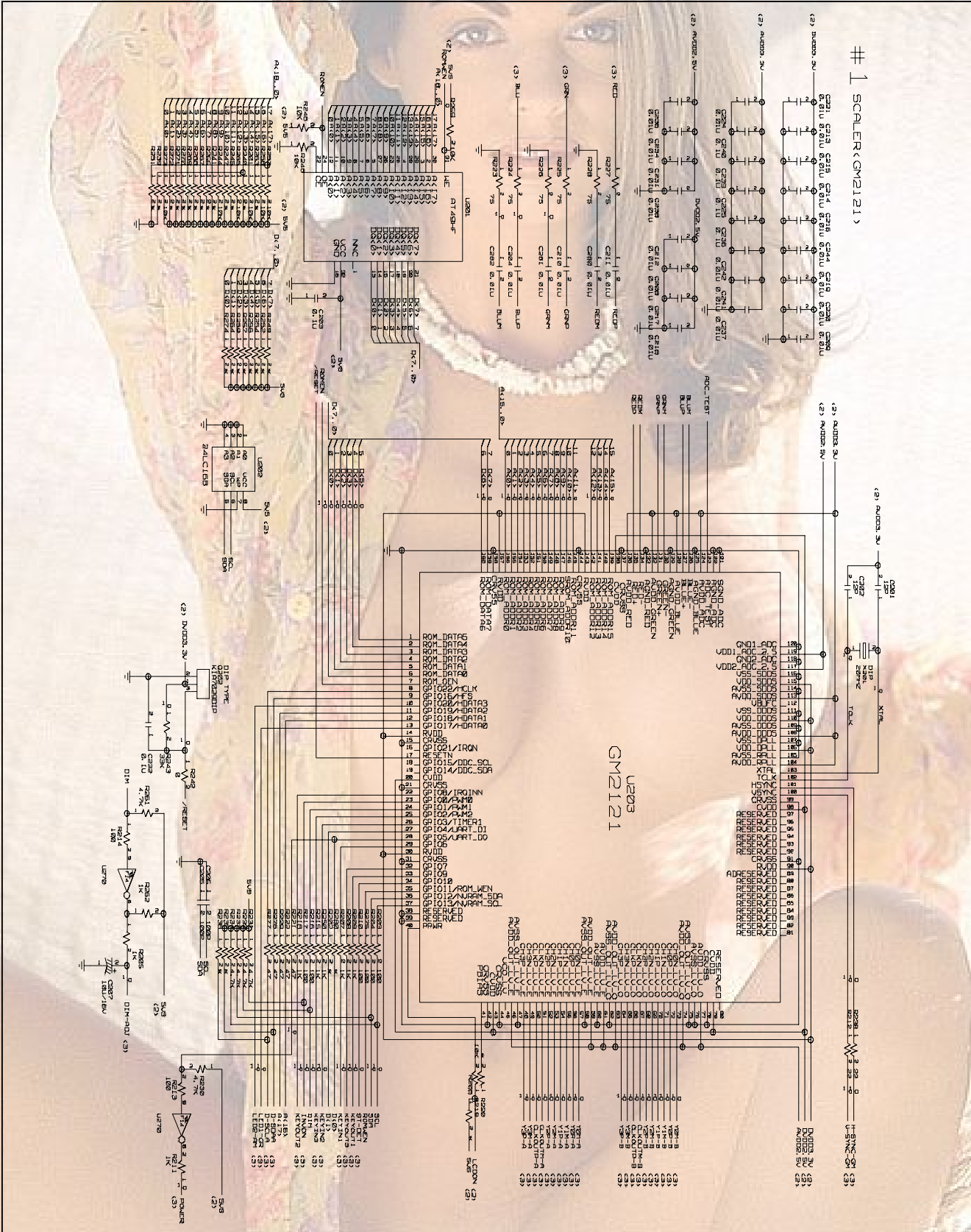
DATE: 2002. 10. 16.					
*S	*AL	LOC. NO.	PART NO.	DESCRIPTION / SPECIFICATION	
			C802	0CH8107D611	100UF 10V 20% 85STD (CYL) R/TP
			C803	0CH8107D611	100UF 10V 20% 85STD (CYL) R/TP
			C804	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C805	0CC102CK41A	1000PF 1608 50V 5% R/TP NPO
			C806	0CC102CK41A	1000PF 1608 50V 5% R/TP NPO
			C807	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C808	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C809	0CH8476F611	47UF 16V 20% 85STD (CYL) R/TP
			C810	0CH8476F611	47UF 16V 20% 85STD (CYL) R/TP
			C811	0CC102CK41A	1000PF 1608 50V 5% R/TP NPO
			C812	0CC102CK41A	1000PF 1608 50V 5% R/TP NPO
			C813	0CK104CK56A	0.1UF 1608 50V 10% R/TP X7R
			C817	0CH8107F611	100UF 16V M 85STD(CYL) R/TP
			C818	0CC102CK41A	1000PF 1608 50V 5% R/TP NPO
			C819	0CK103CK51A	0.01UF 1608 50V 10% R/TP B(Y5P)
			C840	0CE477EH618	470UF KMG 25V M FL TP 5
			C860	0CK105CD56A	1UF 1608 10V 10% R/TP X7R
			C911	0CH3104K566	0.1UF 50V 10% X7R 2012 R/TP
DIODEs					
			D701	0DS226009AA	KDS226 TP KEC SOT-23 80V 300M
			D702	0DS226009AA	KDS226 TP KEC SOT-23 80V 300M
			D703	0DS226009AA	KDS226 TP KEC SOT-23 80V 300M
			D704	0DS226009AA	KDS226 TP KEC SOT-23 80V 300M
			D709	0DS301109AA	MMBD301LT1 TP MOTOROLA SOT23 3
			D710	0DS301109AA	MMBD301LT1 TP MOTOROLA SOT23 3
			ZD703	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323 20
			ZD704	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323 20
			ZD711	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323 20
			ZD718	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323 20
			ZD719	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323 20
			ZD720	0DZ560009DA	UDZ S 5.6B TP ROHM-K SOD323 20
ICs					
			U201	0IZZTSZ213A	ATMEL/STM 32PIN ST OTP LB700G
			U202	0IMMRSS040C	S524A60X51(SCT0) SAMSUNG ELECT
			U203	0IPRPGN004A	GM2121 GENESIS 160P,PQFP TRAY
			U270	0ISTLFA058A	74F14SCX FAIRCHILD 14P,SOIC R/
			U702	0ISS524202B	S524A40X21(SCT0) SAMSUNG ELECT
			U801	0IRH033200A	BA033FP-E2 MOLD-3 TP REGULATOR
			U803	0IPMGON007A	NCP1117ST25T3 ON SEMI SOT223 R
			U804	0TFV180023A	VISHAY SI3865DV R/TP TSOP-6 8V
COILs & COREs					
			L801	6210TCE001G	HH-1M3216-501 CERATEC 3216MM R
			L802	6210TCE001G	HH-1M3216-501 CERATEC 3216MM R
			L803	6210TCE001G	HH-1M3216-501 CERATEC 3216MM R
			L804	6210TCE001G	HH-1M3216-501 CERATEC 3216MM R
			L811	6210TCE001G	HH-1M3216-501 CERATEC 3216MM R
			L823	6210TCE001G	HH-1M3216-501 CERATEC 3216MM R

DATE: 2002. 10. 16.			
*S	*AL	LOC. NO.	PART NO. DESCRIPTION / SPECIFICATION
TRANSISTOR			
		Q202	OIKE702900D KIA7029AP TO-92 TP 2.9V DETECT
RESISTORs			
		R201	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R203	0RJ1000D677 100 OHM 1/10 W 5% 1608 R/TP
		R204	0RJ1000D677 100 OHM 1/10 W 5% 1608 R/TP
		R205	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R207	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R208	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R209	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R210	0RJ1000D677 100 OHM 1/10 W 5% 1608 R/TP
		R211	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R212	0RJ0222D677 22 OHM 1/10 W 5% 1608 R/TP
		R213	0RJ1000D677 100 OHM 1/10 W 5% 1608 R/TP
		R214	0RJ1000D677 100 OHM 1/10 W 5% 1608 R/TP
		R215	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R216	0RJ1000D677 100 OHM 1/10 W 5% 1608 R/TP
		R217	0RJ1000D677 100 OHM 1/10 W 5% 1608 R/TP
		R218	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R219	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R221	0RJ0472D677 47 OHM 1/10 W 5% 1608 R/TP
		R222	0RJ0472D677 47 OHM 1/10 W 5% 1608 R/TP
		R223	0RJ0752D677 75 OHM 1/10 W 5% 1608 R/TP
		R224	0RJ0752D677 75 OHM 1/10 W 5% 1608 R/TP
		R225	0RJ0752D677 75 OHM 1/10 W 5% 1608 R/TP
		R226	0RJ0752D677 75 OHM 1/10 W 5% 1608 R/TP
		R227	0RJ0752D677 75 OHM 1/10 W 5% 1608 R/TP
		R228	0RJ0752D677 75 OHM 1/10 W 5% 1608 R/TP
		R229	0RJ0472D677 47 OHM 1/10 W 5% 1608 R/TP
		R230	0RJ4701D677 4.7K OHM 1/10 W 5% 1608 R/TP
		R231	0RJ4701D677 4.7K OHM 1/10 W 5% 1608 R/TP
		R232	0RJ4701D677 4.7K OHM 1/10 W 5% 1608 R/TP
		R233	0RJ4701D677 4.7K OHM 1/10 W 5% 1608 R/TP
		R234	0RJ4701D677 4.7K OHM 1/10 W 5% 1608 R/TP
		R238	0RJ0222D677 22 OHM 1/10 W 5% 1608 R/TP
		R242	0RJ0000D677 0 OHM 1/10 W 5% 1608 R/TP
		R243	0RJ3302D677 33K OHM 1/10 W 5% 1608 R/TP
		R244	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R246	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R248	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R250	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R253	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R255	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R258	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R261	0RJ4701D677 4.7K OHM 1/10 W 5% 1608 R/TP
		R262	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R265	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R273	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R275	0RJ1000D677 100 OHM 1/10 W 5% 1608 R/TP
		R276	0RJ0472D677 47 OHM 1/10 W 5% 1608 R/TP
		R277	0RJ0472D677 47 OHM 1/10 W 5% 1608 R/TP
		R701	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R702	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R703	0RJ0752D677 75 OHM 1/10 W 5% 1608 R/TP
		R704	0RJ0752D677 75 OHM 1/10 W 5% 1608 R/TP
		R705	0RJ0752D677 75 OHM 1/10 W 5% 1608 R/TP
		R711	0RJ0332D677 33 OHM 1/10 W 5% 1608 R/TP
		R712	0RJ0332D677 33 OHM 1/10 W 5% 1608 R/TP
		R713	0RJ1001D677 1K OHM 1/10 W 5% 1608 R/TP
		R714	0RJ2201D677 2200 OHM 1/10 W 5% 1608 R/TP

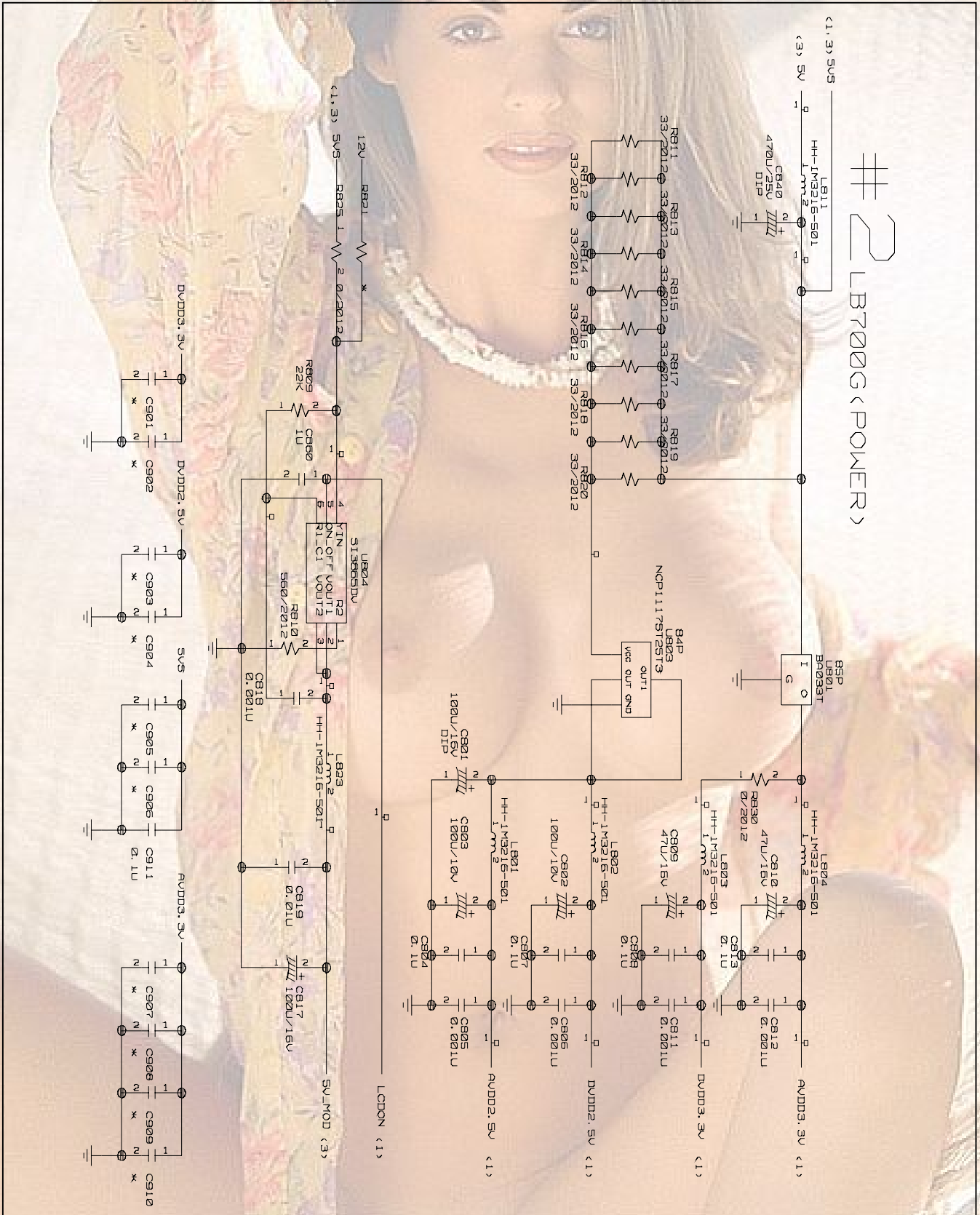
DATE: 2002. 10. 16.			
*S	*AL	LOC. NO.	PART NO. DESCRIPTION / SPECIFICATION
		R715	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R716	0RJ0472D677 47 OHM 1/10 W 5% 1608 R/TP
		R717	0RJ2201D677 2200 OHM 1/10 W 5% 1608 R/TP
		R733	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R734	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R740	0RJ1500D677 150 OHM 1/10 W 5% 1608 R/TP
		R741	0RJ1500D677 150 OHM 1/10 W 5% 1608 R/TP
		R742	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R743	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R744	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R745	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R746	0RH0000D622 0 1/10W P-TYPE TAPPING
		R747	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R748	0RJ1002D677 10K OHM 1/10 W 5% 1608 R/TP
		R749	0RJ4701D677 4.7K OHM 1/10 W 5% 1608 R/TP
		R750	0RJ4701D677 4.7K OHM 1/10 W 5% 1608 R/TP
		R752	0RJ4701D677 4.7K OHM 1/10 W 5% 1608 R/TP
		R809	0RJ2202D677 22K OHM 1/10 W 5% 1608 R/TP
		R810	0RH5600D622 560 1/10W 5 D.R/TP
		R811	0RH0332D622 33 1/10W 5 D.R/TP
		R812	0RH0332D622 33 1/10W 5 D.R/TP
		R813	0RH0332D622 33 1/10W 5 D.R/TP
		R814	0RH0332D622 33 1/10W 5 D.R/TP
		R815	0RH0332D622 33 1/10W 5 D.R/TP
		R816	0RH0332D622 33 1/10W 5 D.R/TP
		R817	0RH0332D622 33 1/10W 5 D.R/TP
		R818	0RH0332D622 33 1/10W 5 D.R/TP
		R819	0RH0332D622 33 1/10W 5 D.R/TP
		R820	0RH0332D622 33 1/10W 5 D.R/TP
		R825	0RH0000D622 0 1/10W P-TYPE TAPPING
		R830	0RH0000D622 0 1/10W P-TYPE TAPPING
OTHERs			
		X201	6212AA2004B HC-49U TXC 20.0MHZ +/- 30 PPM
CONTROL BOARD			
		LED1	0DLLT0208AA LITEON LTST-C155KGSJK R/TP GR
		SW1	140-058E SKHV10910B LGEC NON 12V 20A HO
		SW2	140-058E SKHV10910B LGEC NON 12V 20A HO
		SW3	140-058E SKHV10910B LGEC NON 12V 20A HO
		SW4	140-058E SKHV10910B LGEC NON 12V 20A HO
		SW5	140-058E SKHV10910B LGEC NON 12V 20A HO
		SW6	140-058E SKHV10910B LGEC NON 12V 20A HO
		SW7	140-058E SKHV10910B LGEC NON 12V 20A HO
		SW8	140-058E SKHV10910B LGEC NON 12V 20A HO

SCHEMATIC DIAGRAM

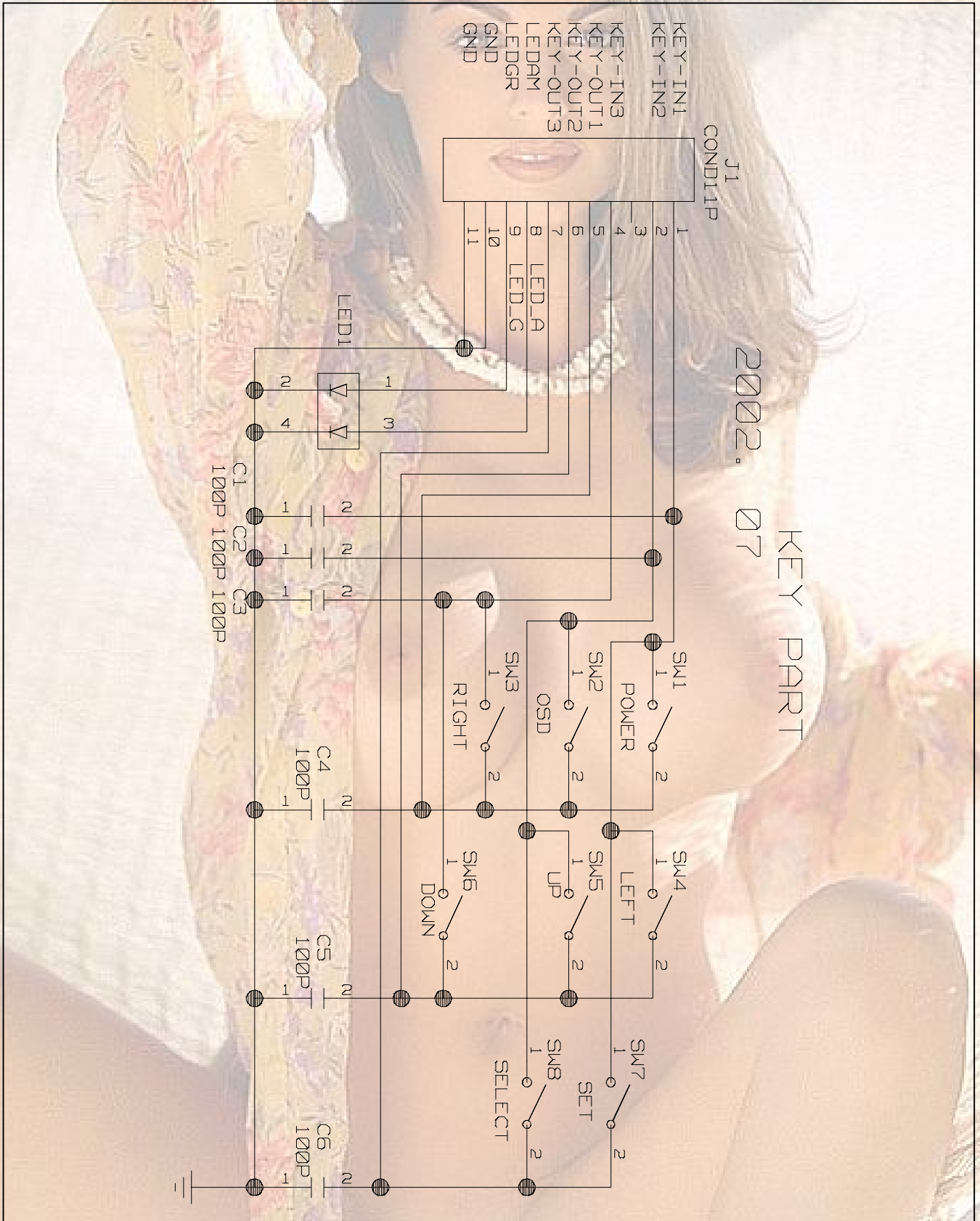
1. GM2121



2. POWER



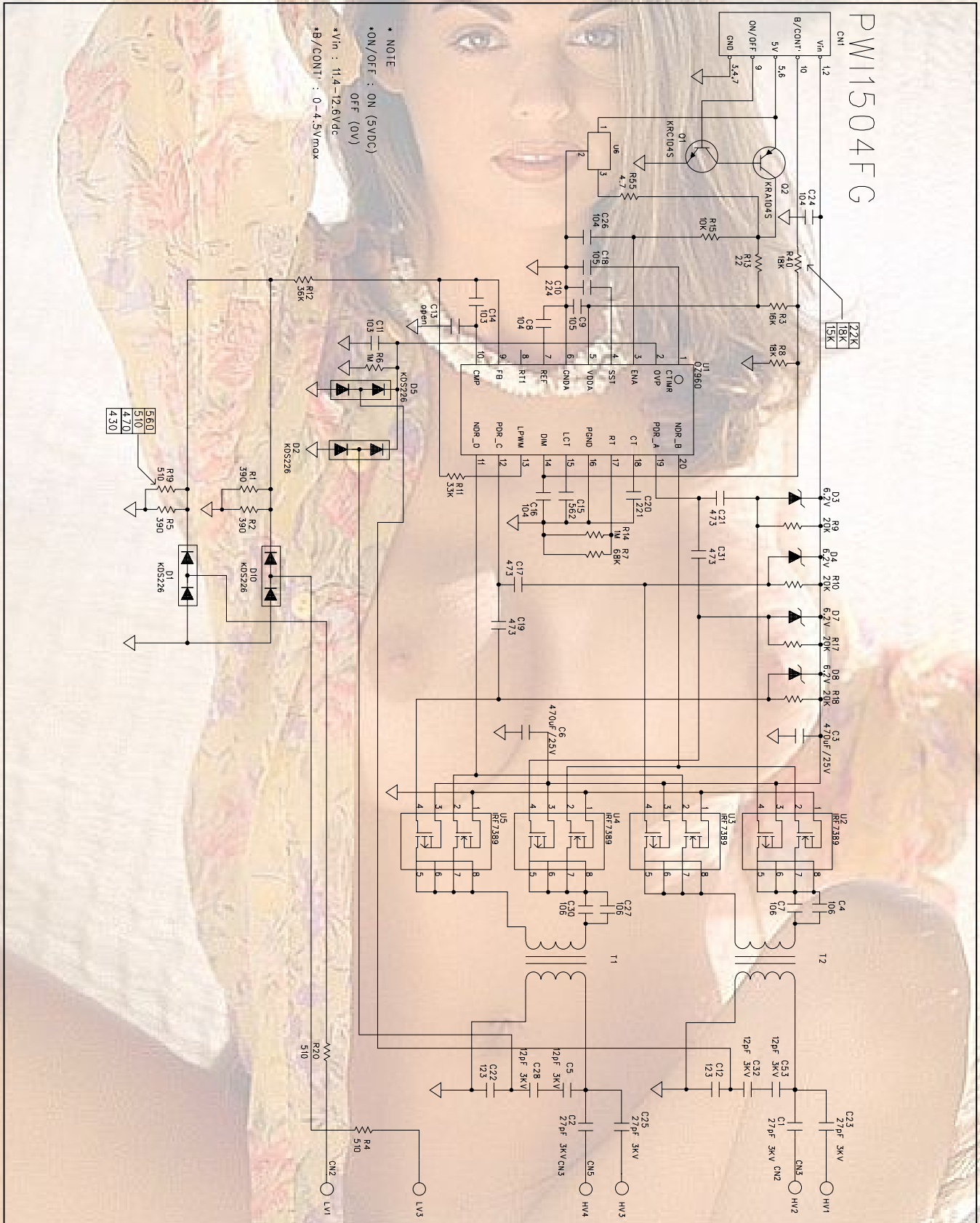
4. CONTROL KEY



5. ADAPTER (AU Module)

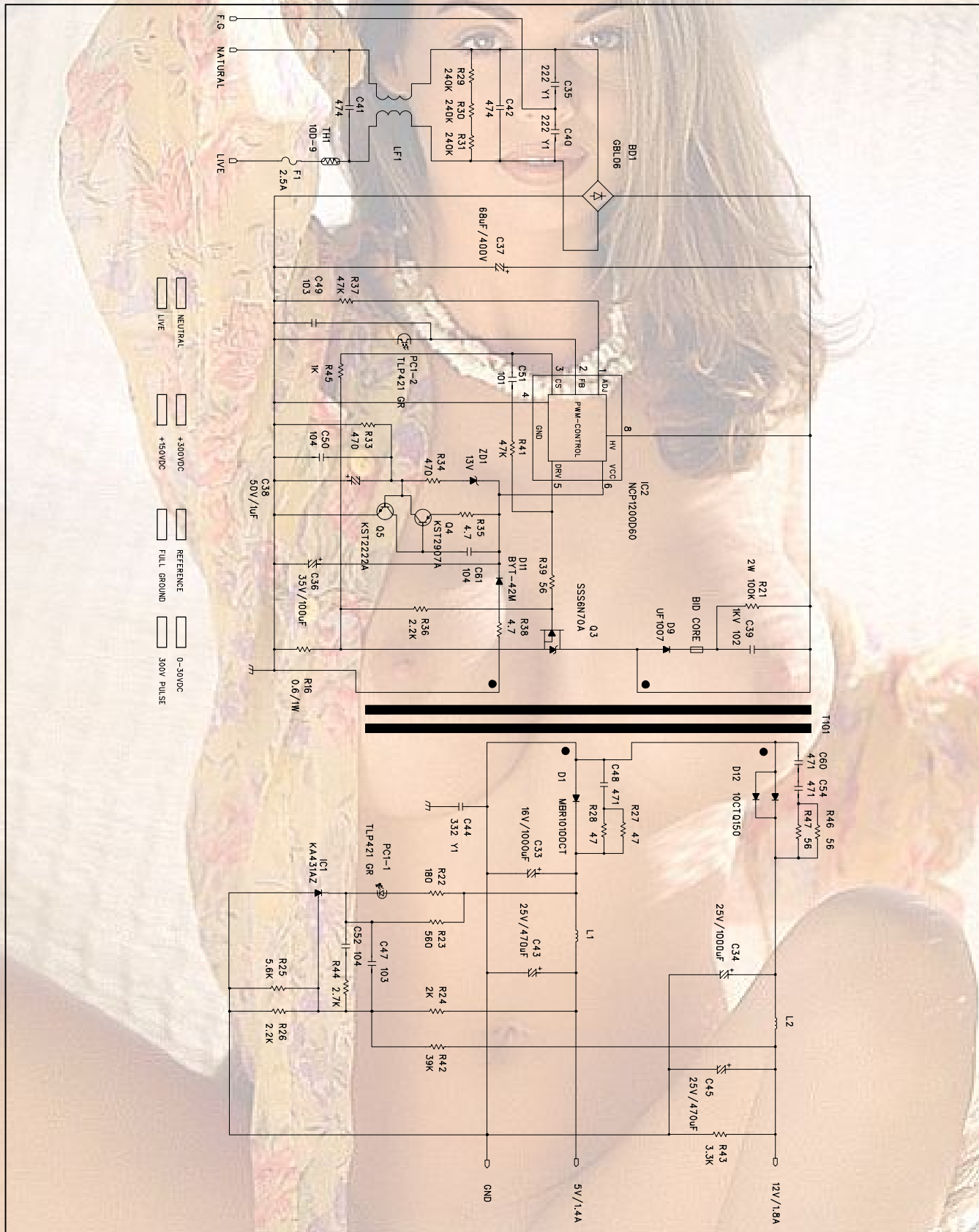


6. INVERTER (AU Module)

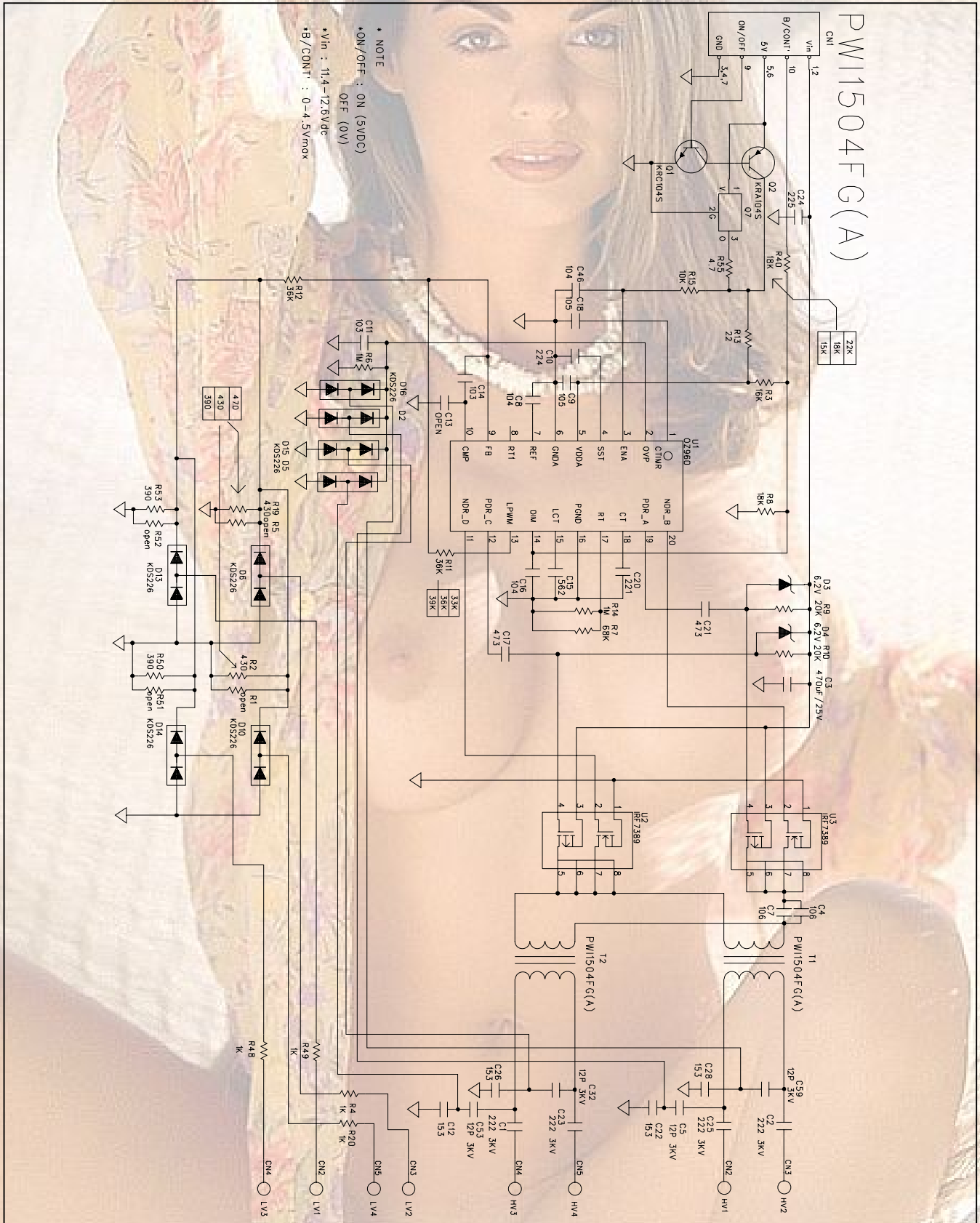


* NOTE
 *ON/OFF : ON (5VDC)
 OFF (0V)
 *Vin : 11.4~12.6Vdc
 *B/CONT : 0~4.5Vmax

7. ADAPTER (HYDIS Module)



8. INVERTER (HYDIS Module)





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