

HL510S

HL710S

Service Manual



DAEWOO ELECTRONICS CORPORATION


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HL510S/HL710S

PRECAUTIONS

 **Warning** : The following information will help you avoid the risk of electric shock, serious injury, and death.

- Plug the power cord into a properly grounded outlet.
There is the risk of electric shock.
- If you hear a noise or smell smoke from the computer or adaptor, unplug the power cord immediately, and call the service center.
There is the risk of electric shock or fire.
- Do not overload an electrical outlet with too many devices.
There is the risk of fire.
- Do not unplug from the outlet by pulling the power cord or when your hands are wet.
There is the risk of electric shock or fire.
- Do not bend the power cord excessively or place heavy objects on it. Keep children and pets away from the power cord as they may damage the power cord. There is the risk of electric shock or fire.
- Do not use a damaged power cord or plug. Make sure the plug fits snugly into the outlet.
There is the risk of electric shock or fire.
- Do not expose the monitor to the direct sun light.
- Do not block the fan louvers.
There is the risk of fire or damage to the monitor.
- Do not attempt to disassemble, fix, or modify the monitor.
There is the risk of electric shock or fire.
- Keep the monitor away from high temperature, humidity, and dust.
Operating environment = 0 ~ 40 Degrees Celsius
Operating environment = 30 ~ 80 Relative Humidity
- Do not allow any object or liquid to enter inside the monitor.
There is the risk of electric shock, fire, or damage to the monitor.



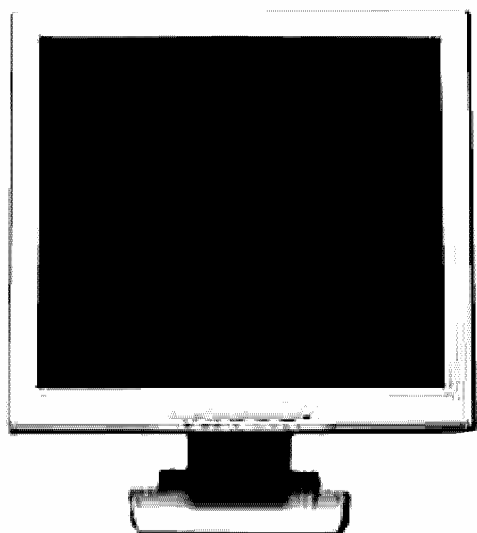
Caution : The following information will help you avoid the risk of minor or moderate injury, or damage to the monitor.

- Use a proper voltage/current level indicated.
- Do not clean the LCD with abrasive chemicals.
There is the risk of damage to the LCD.
- Do not scratch and damage the LCD with sharp objects.
- Keep the monitor away from objects and electrical appliances that may generate electromagnetic fields.
- Place the monitor on a flat, stable surface.
The monitor may fall and there is the risk of damage or injury.
- Unplug the power cord when the monitor is not in use for a prolonged period of time.

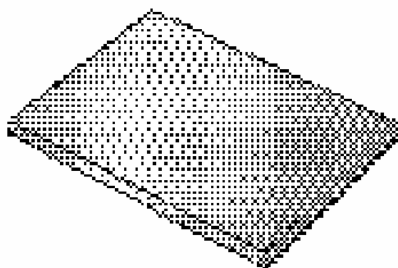
Instruction for Cleaning the Monitor

- Make sure the power cord is unplugged.
- Do not spill or pour liquid on the monitor.
- Cleaning the LCD panel
 1. Use a clean, soft cloth to wipe off dust from the LCD.
 2. If still not clean, wipe the LCD with a clean soft cloth with a small amount of glass cleaner without alcohol or ammonia.
- Caution
Do not use alcohol or ammonia based cleaning products. Abrasive chemicals, such as alcohol or ammonia, may damage the monitor. The company is not responsible for the damages to the monitor caused by the use of alcohol or ammonia based cleaning products.

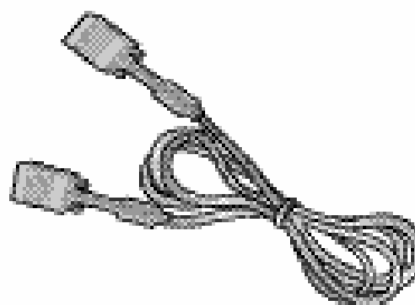
ITEMS



Power cord



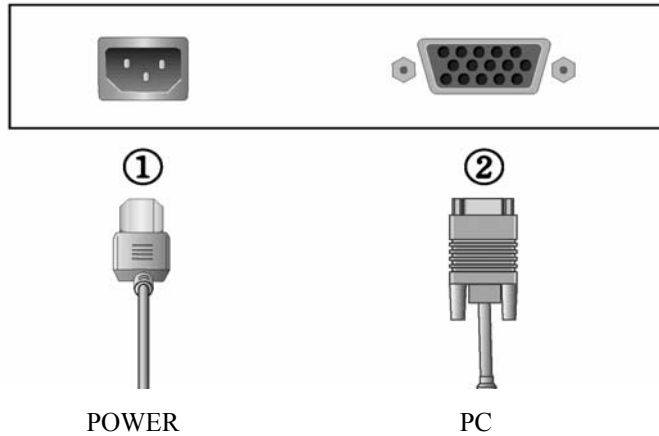
User Manual



15-pin D-Sub Signal Cable

HOW TO CONNECT THE SEVERAL CABLES TO THE LCD MONITOR

▶ **HL510S/HL710S Cable Connections**








Name	Cable connections
1	POWER CORD
2	15-PIN D-SUB SIGNAL CABLE

ADJUSTING THE MONITOR

▶ HL510S/HL710S The Function Control Buttons



▶ How to use the function Key.

Button	Function
	<ol style="list-style-type: none"> 1. First click : The OSD main menu appears. 2. Second click : The OSD main menu disappears.
	<ol style="list-style-type: none"> 1. Select a command function. 2. When you push Auto button, this will optimize quality automatically.
	<p>Down :</p> <ol style="list-style-type: none"> 1. Automatic adjust color(white level) for various input source's white level. 2. Move the on-screen highlighted command item to the next one. 3. Decrease the current value.
	<p>UP :</p> <ol style="list-style-type: none"> 1. Move the on-screen highlighted command item to the Previous one. 2. Increase the current option value.
	Power On/Off toggle button.

HL510S/HL710S SPECIFICATIONS

► **HL510S Specifications**

Panel Specification	
Panel Type	HSD150SX84 or other
Panel Dimension	321.0 (H) x 249.0 (V) x 9.9(D) mm
Panel Weight	950g (max)
Screen diagonal	15.0 inches [304.1 (H) x 228.1 (V)mm]
Pixel pitch	0.297mm x 0.297mm
Pixel format	1024(horizontal) x 768 (Vertical) Pixels RGB stripe arrangement
Color depth	8bit (16,777,216 colors)
Viewing angle (Deg)	H
	Right 65(Typ.)
	Left 65(Typ.)
	V
Up 45(Typ.)	
Down 55(Typ.)	
Response Time	25 ms
Contrast ratio	400 : 1(typ.)
Average brightness	250 cd/m² (typ.)
Cross talk	Hori.:1.3%(Max.), Vert.:1.3%(Max.)
Vertical Sync (Frame rate)	60Hz(typ.), 75Hz(Max)
Horizontal Sync	31.5 ~ 60KHz
Dclk	32.5MHz(Odd/Even)
Electrical Interface	TTL
Monitor's specification	
Resolution	Recommend: 1024x768@60Hz Max. : 1024x768@75Hz
Frequency	Horizontal: 31.5 ~ 60 KHz Vertical : 56 ~ 75 Hz
Sync. Signal	TTL, P. or N.
OSD Control	Power,Menu,Select/Auto,Down,Up

► **HL710S Specifications**

Panel Specification	
Panel Type	HT17E13-100 or other
Panel Dimension	358.5 (H) x 296.5 (V) x 17.0(D) mm typ.
Screen diagonal	17.0 inches [337.92 (H) x 270.336 (V)mm
Pixel pitch	0.264mm x 0.264mm
Pixel format	1280(horizontal) x 1024 (Vertical) Pixels RGB stripe arrangement
Color depth	8bit (16,777,216 colors)
Viewing angle (Deg)	H
	Right 80(Typ.)
	Left 80(Typ.)
	V
	Up 65(Typ.)
	Down 65(Typ.)
Response Time	16 ms
Contrast ratio	500 : 1(typ.)
Average brightness	300 cd/m² (typ.)
Cross talk	Horizontal:2.0%(Max.), Vertical:2.0%(Max.)
Vertical Sync (Frame rate)	60Hz(typ.), 75Hz(Max)
Horizontal Sync	31 ~ 80KHz
Dclk	54MHz(Typ.),68MHz(Max.)
Electrical Interface	LVDS
Monitor's specification	
Resolution	Recommend: 1280x1024@60Hz Max. : 1280x1024@75Hz
Frequency	Horizontal: 31.5 ~ 80 KHz Vertical : 56 ~ 75 Hz
Sync. Signal	TTL, P. or N.
OSD Control	Power,Menu,Select/Auto,Down,Up

DISPLAY MODES

Mode	Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)	Pixel Clock Frequency(MHz)	Sync Polarity(H/V)
VGA	720 X 400	31.468	70.087	28.322	-/+
	640 X 480	31.468	59.940	25.175	-/-
		35.000	66.670	30.240	-/-
		37.500	75.000	31.500	-/-
SVGA	800 X 600	37.879	60.300	40.000	+/+
		48.077	72.188	50.000	+/+
		46.875	75.000	49.500	+/+
XGA	1024 X 768	48.363	60.004	65.000	-/-
		56.476	70.000	75.000	-/-
		60.023	75.029	78.750	+/+
SXGA	1280 X 1024	63.981	60.020	108.000	+,-/+,-
		79.976	75.025	135.000	+/+

※ The optimal resolution is 1024 X 768@60Hz(HL510S)

※ The optimal resolution is 1280 X 1024@60Hz(HL710S)

DPMS POWER SAVING MODE

State	Signal			Power Consumption	Recovery Time	LED Color and Operating status
	H-sync	V-sync	RGB			
ON	Active	Active	Active	Under 40Watt	-	Green
Standby mode	Inactive	Active	Blanked	Less than 5Watt	Within 2Sec	Amber
Suspend mode	Active	Inactive	Blanked			Amber
OFF	Inactive	Inactive	Blanked			Amber

OSD MENU**▶ Menu Tree**

Main Menu	Sub Menu	Function Description	
BRIGHT/CONTRAST	BRIGHTNESS	Control of brightness	
	CONTRAST	Control of contrast	
	GAMMA	Control of gamma	
	EXIT		
COLOR	COLOR1	Color Temperature 9300k (some blue color)	
	COLOR2	Color Temperature 6500k (some red color)	
	USER COLOR	RED	: 0 ~ 100
		GREEN	: 0 ~ 100
		BLUE	: 0 ~ 100
	EXIT		
	POSITION	HORIZONTAL	Control of horizontal position
VERTICAL		Control of vertical position	
CLOCK		Control of horizontal clock	
PHASE		Control of phase	
EXIT			
OSD FUNCTION	OSD POSITION	Moves the OSD Menu	
	OSD TIME	OSD display time	
	LANGUAGE	Select OSD language	
	EXIT		
SETUP	AUTO BALANCE	Automatic adjust color	
	INFORMATION	Display monitor's information	
	RECALL	Factory default values	
	EXIT		

FACTORY SET

If you push the up button more than 5 seconds in valid PC signal status, factory setting value in MCU save into EEPROM. Every value changes factory setting value.

After factory set executes, power OFF → power ON automatically.

You must push the auto button because of optimum image quality automatically.

When user want factory setting value, you must execute this function.

BURN-IN MODE

If you push the down button more than 5 seconds in disconnected signal cable status, you can see changed color.

Burn-In mode displays chaged color continually. (white, red, blue, green etc.)

We can check normal operating status of the monitor under mass production.

If you want to finish Burn-In mode, you can turn off the power by only push the power button.

INVERTER & POWER

► Inverter & POWER(HL510S)

- L.I.P.S : LCD INVERTER POWER SYSTEM(SHI1520WY)

► Specification

- Operate 2 CCFL Lamps.
- Current Feedback Control
- Input Voltage : DC 12V.
- When any lamp doesn't operate, the panel is under protection status.
Protection status means that circuit protect the other lamp.
- PWM Control.
- Remote Power On/Off control
- High Efficiency

► Electrical Characteristics

Description	Min	Typ	Max	Unit	Remark
Input Voltage	10.8	12	18.6	VDC	
Input Current	800	1000	1200		12Vdc
Open Voltage	1300			VACrms	Open Lamp
Lamp Voltage		520		VACrms	Out C : 8.0mA
Output Current	5	5.8	6.6	mArms	12Vdc
Output Frequency	45	54	60	Khz	
Efficiency	75			%	12Vdc

► **Pin Connection**

- INPUT CONNECTOR CN1

Pin NO.	Symbol	Description
1	DIM(BRT_Adj)	NC
3,4	GND	GND
2	S/W(ON/OFF)	TTL HI : ON ;LOW : OFF
5,6	VDD	+5VDC
8	VIN	+12VDC(TYP)
7	NC	NC

- OUTPUT CONNECTOR CN2,CN3

Pin NO.	Symbol	Description
1	HV	HI VOLTAGE TERMINAL
2	LV(RETURN)	LOV VOLTAGE TERMINAL

► **Inverter & POWER(HL510S)**

- **L.I.P.S : LCD INVERTER POWER SYSTEM(FLF1521-04A)**

► **Specification**

- Operate 2 CCFL Lamps.
- Current Feedback Control
- Input Voltage : DC 12V.
- When any lamp doesn't operate, the panel is under protection status.
Protection status means that circuit protect the other lamp.
- PWM Control.
- Remote Power On/Off control
- High Efficiency

► **Electrical Characteristics**

Description	Min	Typ	Max	Unit	Remark
Input Voltage	11	12	13	VDC	
Input Current	0.6	1.0	1.2	A	12Vdc
Output Current	5	6.0	7.0	mArms	1ccfl current
Lamp Frequency	40	47	55	Khz	12Vdc
ON/OFF Control	Normal Operation			VDC	Vin=12V ON/OFF=5V
	Shunt-down(Lamp off)			VDC	Vin=12V ON/OFF=5V
Kick-Off Voltage	MODRE THAN 1350			Vrms	Kick-Off

► **Pin Connection**

- INPUT CONNECTOR CN1

Pin NO.	Symbol	Description
1,7	DIM(BRT_Adj)	NC
3,4	GND	GND
2	S/W(ON/OFF)	TTL HI : ON ;LOW : OFF
5,6	VIN 1	+5VDC
8	VIN 2	+12VDC(TYP)

- OUTPUT CONNECTOR CN2,CN3

Pin NO.	Symbol	Description
1	HV	HI VOLTAGE TERMINAL
2	LV(RETURN)	LOV VOLTAGE TERMINAL

► **Inverter & POWER(HL710S)**

- **L.I.P.S : LCD INVERTER POWER SYSTEM(FLF1742-04A)**

► **Specification**

- Operate 4 CCFL Lamps.
- Current Feedback Control
- Input Voltage : DC 12V.
- When any lamp doesn't operate, the panel is under protection status.
Protection status means that circuit protect the other lamp.
- PWM Control.
- Remote Power On/Off control
- High Efficiency

► **Electrical Characteristics**

Description	Min	Typ	Max	Sign	Remark
Input Voltage	11.0	12.0	13.0	Vin	
Input Current	1.5	1.7	1.9	A	12Vdc
Output Current	5.0	6.0	7.0	mArms	1ccfl current
Lamp Frequency	40	47	55	kHz	
ON/OFF Control	Normal Operation			ON	Vin=12V ON/OFF=5V
	Shunt-down(Lamp off)			OFF	Vin=12V ON/OFF=0V
Kick-Off Voltage	MORE THAN 1100			Vrms	Kick-Off

► Pin Connection

- INPUT CONNECTOR CON1

Pin NO.	Symbol	Description
1,2	VIN 1	Input Voltage : 12V
3,4,7	GND	GND
5,6	VIN 2	Inopt Voltage : 5V
8	ON/OFF	Power System Return
9	NC	NC

- OUTPUT CONNECTOR CN1,2,3,4

Pin NO.	Symbol	Description
1	HV1,2,3,4	HI VOLTAGE TERMINAL
2	LV1,2,3,4	LOV VOLTAGE TERMINAL

TROUBLESHOOTING**► No operating at all**

What you see	Suggested Actions
Is the power inserted correctly?	Insert the plug correctly referring to the User Manual.
Does the Power Adapter operate correctly?	Check the Power Adapter. The green LED is OK.
The Power Adapter operates correctly, but the LCD Monitor does not operate correctly.	Check the harness of the FUNC. B/D.
Does The Power On/Off and the LED Operate corretly?	If the program of the MICOM is error, then exchange the MICOM. If the AD B/D is error, then exchange the AD B/D.
The Power On/Off and the LED operate correctly, but the OSD menu doesn't display on screen.	First, operate the FACTORY SET. Second, check the Panel Harness that is connected to the AD B/D. Check the LAMP Harness of the Panel. Lastly, exchange the LIPS.
The OSD menu operates correctly but the image doesn't display on screen.	Insert the SIGNAL Cable correctly referring to the User Manual. Check the LAMP Harness of Panel and Inverter. Lastly, Check the LAMP of Panel.
The Power On/Off operates correctly, but the screen is 'ALL WHITE'.	The LAMP is OK. Check the Panel Harness that is connected to the AD B/D.
The Power On/Off operates correctly, but the screen is 'ALL BLACK'.	Check the LAMP Cable. Check or exchange the LIPS. Check the Panel Cable.

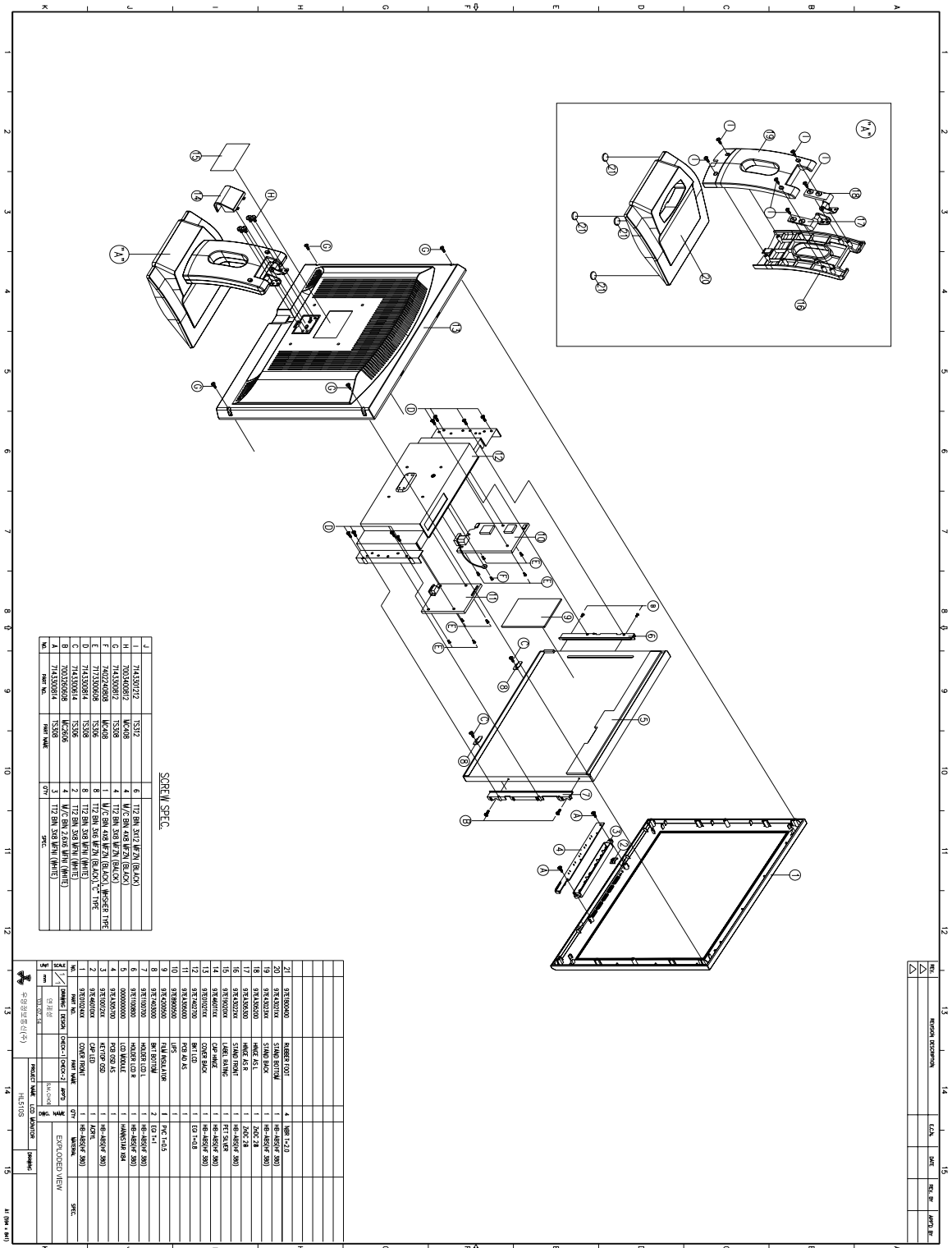
► Doesn't display on LCD

<p>“Out of range” message</p>	<p>[Window 98, 98 second, Me,2000] Reboot safe mode. (press the F8 key). Setting Resolution 1280*1024 in display properties menu and then setting 60Hz vertical frequency. → You can see resolution information the lower end of OSD menu when you push the menu button.</p> <p>[Window XP] After reboot a computer, display booting menu on screen by press the F8 key. Select VGA mode and then setting Resolution 1280*1024 in display properties menu and setting 60Hz vertical frequency.</p>
<p>“No signal Input” message</p>	<p>Check the signal cable. Check DPMS mode in PC. Check pins of the signal cable.</p>
<p>If PC keeps DPMS status Continually (No signal Input, LED color amber)</p>	<p>Check the signal cable. Check pins of the signal cable. Check HS_VGA and VS_VGA in schematics.</p>
<p>Doesn't display on screen Correctly include OSD menu</p>	<p>Check scaler output signal. Check panel harness between panel and AD B/D. Check solder status of the scaler.</p>
<p>Doesn't display on screen Correctly except OSD menu</p>	<p>Check the signal cable. Check scaler input signal (RGB,H-SYNC,V-SYNC)</p>
<p>Noise in vertical pattern.</p>	<p>Execute Auto Config. According to graphic card. Check 60Hz vertical frequency in display properties.</p>
<p>Display position error</p>	<p>Auto Config Display position error occurred on dark or moving picture.(like game) In this case, you must execute Auto Config in windows screen.</p>

Color error include OSD menu	Check the panel harness. Check scaler output signal.
Color error except OSD ment.	Check the signal cable. Check pins of the signal cable. Check input/output signal of the signal cable
Key button error	Check the function(key) harness. Check the function ass'y (mechanical).
Brightness differ between upper and lower on screen.	Because of viewing angle.

EXPLODE VIEW

▶ HL510S

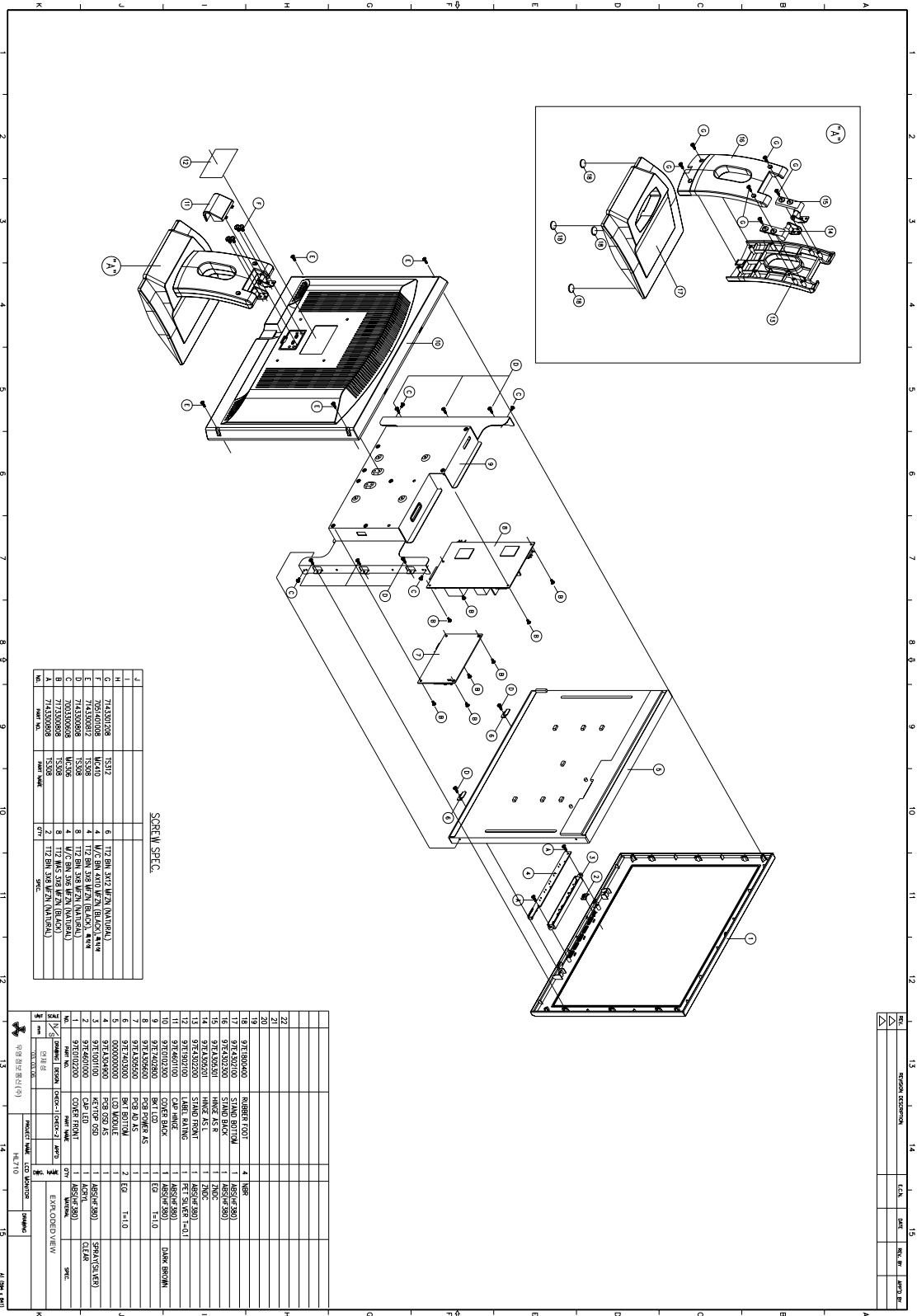


SCREW SPEC.

No.	Part No.	Part Name	Qty
1	714530012	TS12	4
2	714530012	TS12	4
3	714530012	TS12	4
4	714530012	TS12	4
5	714530012	TS12	4
6	714530012	TS12	4
7	714530012	TS12	4
8	714530012	TS12	4
9	714530012	TS12	4
10	714530012	TS12	4
11	714530012	TS12	4
12	714530012	TS12	4
13	714530012	TS12	4
14	714530012	TS12	4
15	714530012	TS12	4
16	714530012	TS12	4
17	714530012	TS12	4
18	714530012	TS12	4
19	714530012	TS12	4
20	714530012	TS12	4
21	714530012	TS12	4

No.	Part No.	Part Name	Qty
1	714530012	TS12	4
2	714530012	TS12	4
3	714530012	TS12	4
4	714530012	TS12	4
5	714530012	TS12	4
6	714530012	TS12	4
7	714530012	TS12	4
8	714530012	TS12	4
9	714530012	TS12	4
10	714530012	TS12	4
11	714530012	TS12	4
12	714530012	TS12	4
13	714530012	TS12	4
14	714530012	TS12	4
15	714530012	TS12	4
16	714530012	TS12	4
17	714530012	TS12	4
18	714530012	TS12	4
19	714530012	TS12	4
20	714530012	TS12	4
21	714530012	TS12	4

▶ HL710S



SCREW SPEC.

No.	Part No.	Part Name	Unit	Spec.
1	714300108	TS112	6	T1/2 BIN. 3/12 W/ZN (NATURAL)
2	714300109	TS120	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
3	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
4	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
5	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
6	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
7	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
8	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
9	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
10	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
11	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
12	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
13	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
14	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
15	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
16	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
17	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
18	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
19	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
20	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
21	714300108	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)
22	714300109	TS108	4	T1/2 BIN. 3/12 W/ZN (NATURAL)

No.	Part No.	Part Name	Unit	Spec.
1	917400100	RUBBER FOOT	4	NBR
2	917400100	SHAWD BOTTOM	1	ASB(F#380)
3	917400100	SHAWD BACK	1	ASB(F#380)
4	917400100	HINGE ASY	1	ZINC
5	917400100	HINGE ASY	1	ZINC
6	917400100	SHAWD FRONT	1	ASB(F#380)
7	917400100	SHAWD FRONT	1	ASB(F#380)
8	917400100	PET SURFER +G1	1	PET SURFER +G1
9	917400100	CAP HINGE	1	ASB(F#380)
10	917400100	BEZEL	1	ASB(F#380)
11	917400100	BEZEL	1	ASB(F#380)
12	917400100	BEZEL	1	ASB(F#380)
13	917400100	BEZEL	1	ASB(F#380)
14	917400100	BEZEL	1	ASB(F#380)
15	917400100	BEZEL	1	ASB(F#380)
16	917400100	BEZEL	1	ASB(F#380)
17	917400100	BEZEL	1	ASB(F#380)
18	917400100	BEZEL	1	ASB(F#380)
19	917400100	BEZEL	1	ASB(F#380)
20	917400100	BEZEL	1	ASB(F#380)
21	917400100	BEZEL	1	ASB(F#380)
22	917400100	BEZEL	1	ASB(F#380)
23	917400100	BEZEL	1	ASB(F#380)
24	917400100	BEZEL	1	ASB(F#380)
25	917400100	BEZEL	1	ASB(F#380)
26	917400100	BEZEL	1	ASB(F#380)
27	917400100	BEZEL	1	ASB(F#380)
28	917400100	BEZEL	1	ASB(F#380)
29	917400100	BEZEL	1	ASB(F#380)
30	917400100	BEZEL	1	ASB(F#380)
31	917400100	BEZEL	1	ASB(F#380)
32	917400100	BEZEL	1	ASB(F#380)
33	917400100	BEZEL	1	ASB(F#380)
34	917400100	BEZEL	1	ASB(F#380)
35	917400100	BEZEL	1	ASB(F#380)
36	917400100	BEZEL	1	ASB(F#380)
37	917400100	BEZEL	1	ASB(F#380)
38	917400100	BEZEL	1	ASB(F#380)
39	917400100	BEZEL	1	ASB(F#380)
40	917400100	BEZEL	1	ASB(F#380)
41	917400100	BEZEL	1	ASB(F#380)
42	917400100	BEZEL	1	ASB(F#380)
43	917400100	BEZEL	1	ASB(F#380)
44	917400100	BEZEL	1	ASB(F#380)
45	917400100	BEZEL	1	ASB(F#380)
46	917400100	BEZEL	1	ASB(F#380)
47	917400100	BEZEL	1	ASB(F#380)
48	917400100	BEZEL	1	ASB(F#380)
49	917400100	BEZEL	1	ASB(F#380)
50	917400100	BEZEL	1	ASB(F#380)
51	917400100	BEZEL	1	ASB(F#380)
52	917400100	BEZEL	1	ASB(F#380)
53	917400100	BEZEL	1	ASB(F#380)
54	917400100	BEZEL	1	ASB(F#380)
55	917400100	BEZEL	1	ASB(F#380)
56	917400100	BEZEL	1	ASB(F#380)
57	917400100	BEZEL	1	ASB(F#380)
58	917400100	BEZEL	1	ASB(F#380)
59	917400100	BEZEL	1	ASB(F#380)
60	917400100	BEZEL	1	ASB(F#380)
61	917400100	BEZEL	1	ASB(F#380)
62	917400100	BEZEL	1	ASB(F#380)
63	917400100	BEZEL	1	ASB(F#380)
64	917400100	BEZEL	1	ASB(F#380)
65	917400100	BEZEL	1	ASB(F#380)
66	917400100	BEZEL	1	ASB(F#380)
67	917400100	BEZEL	1	ASB(F#380)
68	917400100	BEZEL	1	ASB(F#380)
69	917400100	BEZEL	1	ASB(F#380)
70	917400100	BEZEL	1	ASB(F#380)
71	917400100	BEZEL	1	ASB(F#380)
72	917400100	BEZEL	1	ASB(F#380)
73	917400100	BEZEL	1	ASB(F#380)
74	917400100	BEZEL	1	ASB(F#380)
75	917400100	BEZEL	1	ASB(F#380)
76	917400100	BEZEL	1	ASB(F#380)
77	917400100	BEZEL	1	ASB(F#380)
78	917400100	BEZEL	1	ASB(F#380)
79	917400100	BEZEL	1	ASB(F#380)
80	917400100	BEZEL	1	ASB(F#380)
81	917400100	BEZEL	1	ASB(F#380)
82	917400100	BEZEL	1	ASB(F#380)
83	917400100	BEZEL	1	ASB(F#380)
84	917400100	BEZEL	1	ASB(F#380)
85	917400100	BEZEL	1	ASB(F#380)
86	917400100	BEZEL	1	ASB(F#380)
87	917400100	BEZEL	1	ASB(F#380)
88	917400100	BEZEL	1	ASB(F#380)
89	917400100	BEZEL	1	ASB(F#380)
90	917400100	BEZEL	1	ASB(F#380)
91	917400100	BEZEL	1	ASB(F#380)
92	917400100	BEZEL	1	ASB(F#380)
93	917400100	BEZEL	1	ASB(F#380)
94	917400100	BEZEL	1	ASB(F#380)
95	917400100	BEZEL	1	ASB(F#380)
96	917400100	BEZEL	1	ASB(F#380)
97	917400100	BEZEL	1	ASB(F#380)
98	917400100	BEZEL	1	ASB(F#380)
99	917400100	BEZEL	1	ASB(F#380)
100	917400100	BEZEL	1	ASB(F#380)

PART LIST

► **HL510S Mechanical Part List**

SCREW SPEC.

I	7143301212	TS312	6	TT2 BIN 3X12 MFZN (BLACK)
H	7003400812	MC408	4	M/C BIN 4X8 MFZN (BLACK)
G	7143300812	TS308	4	TT2 BIN 3X8 MFZN (BLACK)
F	7402240808	MC408	1	M/C BIN 4X8 MFZN (BLACK), WWSHER TYPE
E	7173300608	TS306	8	TT2 BIN 3X6 MFZN (BLACK), "C" TYPE
D	7143300814	TS308	8	TT2 BIN 3X8 MFNI (WHITE)
C	7143300614	TS306	2	TT2 BIN 3X8 MFNI (WHITE)
B	7003260608	MC2606	4	M/C BIN 2.6X6 MFNI (WHITE)
A	7143300814	TS308	3	TT2 BIN 3X8 MFNI (WHITE)
NO.	PART NO.	PART NAME	Q'TY	SPEC.

21	97E1800400	RUBBER FOOT	4	NBR T=2.0	
20	97E43021XX	STAND BOTTOM	1	HB-ABS(HF 380)	
19	97E43023XX	STAND BACK	1	HB-ABS(HF 380)	
18	97EA305200	HINGE AS L	1	ZnDC 2 $\frac{3}{8}$	
17	97EA305300	HINGE AS R	1	ZnDC 2 $\frac{3}{8}$	
16	97E43022XX	STAND FRONT	1	HB-ABS(HF 380)	
15	97E19020XX	LABEL RATING	1	PET SILVER	
14	97E46011XX	CAP HINGE	1	HB-ABS(HF 380)	
13	97E01021XX	COVER BACK	1	HB-ABS(HF 380)	
12	97E7402700	BKT LCD	1	EGI T=0.8	
11	97EA305000	PCB AD AS	1		
10	97E8900500	LIPS	1		
9	97E4200500	FILM INSULATOR	1	PVC T=0.5	
8	97E7403000	BKT BOTTOM	2	EGI T=1	
7	97E1100700	HOLDER LCD L	1	HB-ABS(HF 380)	
6	97E1100800	HOLDER LCD R	1	HB-ABS(HF 380)	
5	0000000000	LCD MODULE	1	HANNSTAR X84	
4	97EA305700	PCB OSD AS	1		
3	97E10012XX	KEYTOP OSD	1	HB-ABS(HF 380)	
2	97E46010XX	CAP LED	1	ACRYL	
1	97E01024XX	COVER FRONT	1	HB-ABS(HF 380)	
NO.	PART NO.	PART NAME	Q'TY	MATERIAL	SPEC.

► HL710S Mechanical Part List

SCREW SPEC.

G	7143301208	TS312	6	TT2 BIN 3X12 MFZN (NATURAL)
F	7051401008	MC410	4	M/C BIN 4X10 MFZN (BLACK), 흑착색
E	7143300812	TS308	4	TT2 BIN 3X8 MFZN (BLACK), 흑착색
D	7143300808	TS308	8	TT2 BIN 3X8 MFZN (NATURAL)
C	7003300608	MC306	4	M/C BIN 3X6 MFZN (NATURAL)
B	7173300808	TS308	8	TT2 WAS 3X8 MFZN (BLACK)
A	7143300808	TS308	2	TT2 BIN 3X8 MFZN (NATURAL)
NO.	PART NO.	PART NAME	Q'TY	SPEC.

18	97E1800400	RUBBER FOOT	4	NBR	
17	97E4302100	STAND BOTTOM	1	ABS(HF380)	
16	97E4302300	STAND BACK	1	ABS(HF380)	
15	97EA305301	HINGE AS R	1	ZNDC	
14	97EA305201	HINGE AS L	1	ZNDC	
13	97E4302200	STAND FRONT	1	ABS(HF380)	
12	97E1902100	LABEL RATING	1	PET SILVER T=0.1	
11	97E4601100	CAP HINGE	1	ABS(HF380)	
10	97E0102300	COVER BACK	1	ABS(HF380)	DARK BROWN
9	97E7402800	BKT LCD	1	EGI T=1.0	
8	97EA305600	PCB POWER AS	1		
7	97EA305500	PCB AD AS	1		
6	97E7403000	BKT BOTTOM	2	EGI T=1.0	
5	0000000000	LCD MODULE	1		
4	97EA304900	PCB OSD AS	1		
3	97E1001100	KEYTOP OSD	1	ABS(HF380)	SPRAY(SILVER)
2	97E4601000	CAP LED	1	ACRYL	CLEAR
1	97E0102200	COVER FRONT	1	ABS(HF380)	
NO.	PART NO.	PART NAME	Q'TY	MATERIAL	SPEC.

► HL510S AD B/D Part List

Location	Parts Code	Parts Name	Parts Spec.	A/J	Remark
RN300,RN301	HRAS103JBA	R CHIP ARRAY	1/16W 10K J 3216 ARRAY		
RN305,RN306	HRAS472JBA	R CHIP ARRAY	1/16W 4.7K J 3216 ARRAY		
RN401,RN402, RN403,RN404, RN405,RN407, RN408,RN409, RN410,RN411, RN412	HRAS330JBA	R CHIP ARRAY	1/16W 33 J 3216		
RN302,RN303	HRAS000JBA	R CHIP ARRAY	1/16W 0 J 3216 ARRAY		
R103,R205,R222, R223,R230,R314, R318,R319,L401, L402,L403,L404, L405,L406,L407, L408,L409,L410, L411,L412,L413, L414,L415,L416, L417,L418,L419, L420,L421,L422, L423,L424,L425, L426,L427,L428, L429,L430,L431, L432,L433,L434, L435,L436,L437, L438,L439,L440, L441,L442,L443, L444,L445,L446, R505,R599	HRFS000JBA	R CHIP	1/16W 0 J 1608		
R298,R299,R303, R306,R307,R310, R395,R507	HRFS472JBA	R CHIP	1/16W 4.7K J 1608		
R102,R305,R315, R508,R510	HRFS103JBA	R CHIP	1/16W 10K J 1608		
R101,R304	HRFS105JBA	R CHIP	1/16W 1M J 1608		

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R201,R203,R206, R210,R211,R212, R220,R308,R309, R326,R327	HRFS101JBA	R CHIP	1/16W 100 J 1608		
R202,R204,R221	HRFS750JBA	R CHIP	1/16W 75 J 1608		
R209	HRFS330JBA	R CHIP	1/16W 33 J 1608		
R302	HRFS822JBA	R CHIP	1/16W 8.2K J 1608		
R396,R397	HRFS471JBA	R CHIP	1/16W 470 J 1608		
R506,R509	HRFS104JBA	R CHIP	1/16W 100K J 1608		
R312,R332	HRFS151JBA	R CHIP	1/16W 150 J 1608		
R313,R322,R323	HRFS223JBA	R CHIP	1/16W 22K J 1608		
R320,R321	HRFS201JBA	R CHIP	1/16W 200 J 1608		
R325,R324	HRFS102JBA	R CHIP	1/16W 1K J 1608		
C101,C102,C108, C109,C110,C111, C112,C113,C114, C115,C118,C119, C120,C122,C123, C124,C126,C127, C128,C129,C301, C303,C307,C308, C313,C396,C397, C507,C512,C513, C515,C516,C521, C524,C527,C530, C533	HCCK104ZBA	C CHIP	50V 0.1uF Z 1608		
C106,C107,C304, C305	HCCK220JBA	C CHIP	50V 22pF J 1608		
C298	HCCK680JBA	C CHIP	68pF 50V J 1608		
C210	HCCK101JBA	C CHIP	100pF 50V J 1608		
C203,C205,C209	HCCH105KBA	C CHIP	25V 1uF K 1608		
C522,C525,C528, C531,C532	HCCH103KBA	C CHIP	25V 10nF K 1608		
C514,C207	HCCK102KBA	C CHIP	50V 1nF K 1608		

C204,C206,C208, C299,C401,C402, C403,C404,C405, C406,C407,C408, C409,C410,C411, C412,C413,C414, C415,C416,C417, C418,C419,C420, C421,C422,C423, C424,C425,C426, C427,C428,C429, C430,C431,C432, C433,C434,C435, C436,C437,C438, C439,C440,C441, C442,C443,C444, C445,C446	HCCCK330JBA	C CHIP	50V 33pF J 1608		
C302,C306,C518, C519,C520,C523, C526,C529	CEXF1C470A	C ELECTRO	16V 47uF 20% 5X11 TAP		
C506	CEXF1C471A	C ELECTRO	16V 470uF 20% 10X12.5 TAP		
C517	CEXF1C101A	C ELECTRO	16V 100uF 20% 6.3X11 TAP		
C105,C116,C117, C121,C125	CEXF1C100A	C ELECTRO	16V 10uF 20% 5X11TAP		
D205,D208,D209, D301,D302,D303, D304,D305,D306, D307	DBAV99----	SWITCHING DIODE	BAV99 (SOT-23)		
ZD201,ZD202, ZD203,ZD204	DZMM55C5V1	ZENOR DIODE	ZMM55C5V1		
CN201	97E6200100	15-PIN D-SUB	Right Angle(DAH-15RF-4B4-FH)		
J300	99E6203086	CONN WAFER	IBP-08R-20T(GIL-S-8P-S2L2-EF)		
CN401,CN402	97E6200735	CONN WAFER	FPCH-40P3-0.5-SM		
CN401,CN402	97E6200801	CONN WAFER	FH12K-40S-0.5SH	A	
J501	99E6203075	CONN WAFER	IBP-07S-20T(GIL-S-7P-S2T2)		
RN406	HFFH4M121E	CHIP BEAD ARRAY	CIA 31J 121 NE		
L201,L202,L203	HFA1608301	CHIP BEAD	CIM10J301NC		
L204	HFA1608121	CHIP BEAD	CIM10J121NC		

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L599	HFA3216301	CHIP BEAD	CIM31J301NC		
L103,L107,L502, L503,L504,L505, L506	HFA2012301	CHIP BEAD	CIM21J301NE		
Q302,Q301	TSBT3906-B	TR CHIP	SBT3906 SOT-23		
Q300,Q502	TSBT3904-B	TR CHIP	SBT3904 SOT-23		
U101	1MST9015--	IC SCALER (MSTAR)	MST9015 LCD Controller		
U300	1WT61P4L44	MCU (WELTREND)	WT61P4L44		
U300A	97E6300230	MCU SOCKET	CCSD-44T-SM (MCU)		
U301	124LC08BSN	IC EEPROM	24LC08B SOIC 8PIN		
U502	1FDC6329L-	IC INTEGRATED LOADSWITCH	FDC6329L SUPERSOT TM-6		
U505,U506	1916433CG-	IC REGULATOR	SOT-223 3.3V		
U505,U506	1A111733VC	IC POWER	APL1117-33VC-TR (SOT-223 Package)	A	
U504	1RT916425G	IC REGULATOR	SOT-223 2.5V		
U504	1A111725VC	IC POWER	APL1117-25VC-TR (SOT-223 Package)	A	
Y101	5XJ14R318E	CRYSTAL QUARTZ	14.31818MHz XTAL_2 20pF DIP		
Y300	5XJ12----E	CRYSTAL QUARTZ	12MHz XTAL_2 16pF DIP		
PCB	97E6500320-05	AD_PCB	2-LAYER[99*125]		
	97E8803031	FFC CABEL	40P-90mm-40P (INSULATION COATING)		
	97E8803025	POWER HARNESS	7PIN-100mm-8PIN		
	97E8803033	POWER HARNESS	7PIN-100mm-8PIN	A	
	97E8803024	Function HARNESS	8PIN-130mm-8PIN		
	97E8803032	Function HARNESS	8PIN-130mm-8PIN	A	

► HL510S FUNCTION B/D Part List

Location	Parts Code	Parts Name	Parts Spec.	A/J	Remark
PCB	97E6500340-02	FUNCTION_PCB	1-LAYER[159*13.7]		
LED1	DLSAM3270-	LED	LED 3Φ 3PIN(2.54-pitch)		
SW1,SW2,SW3, SW4,SW5	5S51280A6-	TACT SWITCH	1280A6 (KNOB-5mm)		
CON1	99E6203086	CONN WAFER	IBP-08R-20T(GIL-S-8P-S2L2-EF)		

► **HL710S AD B/D Part List**

Location	Parts Code	Parts Name	Parts Spec.	A/J	Remark
C41,C42,C43	HCCK200JBA	C CHIP	20pF 50V J 1608		
C61,C62,C85, C90	HCCK220JBA	C CHIP	22pF 50V J 1608		
C44	HCCK330JBA	C CHIP	33pF 50V J 1608		
C92	HCCK101JBA	C CHIP	100pF 50V J 1608		
C45	HCCK221JBA	C CHIP	220pF 50V J 1608		
C93	HCCK471JBA	C CHIP	470pF 50V J 1608		
C13,C37	HCCH103KBA	C CHIIP	10nF 25V K 1608		
C6,C8,C12, C15,C19,C24, C26,C28,C34, C35,C36,C38, C39,C40,C48, C49,C50,C51, C53,C54,C55, C56,C58,C64, C66,C68,C69, C70,C71,C72, C74,C76,C77, C78,C79,C80, C81,C82,C84, C87,C88,C91, C94,C95,C96, C97	HCCK104ZBA	C CHIP	0.1uF 50V Z 1608		
C47,C52,C65, C73,C75	CEXF1C100A	C ELECTRO	16V 10uF 20% 5x11		
C30	CEXF1C330A	C ELECTRO	16V 33uF 20% 5x11		
C83,C86	CEXF1C470A	C ELECTRO	16V 47uF 20% 5x11		
C7,C10,C11, C14,C17,C23, C25,C27,C63, C67	CEXF1C101A	C ELECTRO	16V 100uF 20% 6.3*11		
C4,C5,C89	CEXF1C471A	C ELECTRO	16V 470uF 20% 10x12.5		
D1,D2	DRLS4148-P	DIODE	RLS4148 (melf)		

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D4,D5,D6,D7, D8,D9,D10, D12,D13,D14	DBAV99----	CHIP DIODE	BAV99 (SOT-23)		
D16	DZMM55C5V6	ZENER DIODE	ZMM55C5V6		
FB3	HFA3216121	CHIP BEAD	CIM31J121NE (BEAD_120ohm_3216)		
FB4,FB5,FB6, FB7,FB8	HFA2012301	CHIP BEAD	CIM21J301NE (BEAD_300ohm_2012)		
FB10,FB15, R16,FB16, FB18,FB19, FB20,FB21, FB22	HFA1608121	CHIP BEAD	CIM10J121NC (BEAD_120ohm_1608)		
J1	99E6203095	CONN WAFER	IBP-09S-20T(GIL-S-9P-S2T2)		
J2	97E6200100	15-PIN D-SUB	DAH-15RF-4B4-FH		
J3	97E6200710	CONN WAFER	12507WR-30000 (30P LVDS wafer YEONHO)		
J5	97E6200734	CONN WAFER	IBP-07R-20T(GIL-S-7P-S2L2-EF)		
Q1	TSBT3904-B	TR CHIP	SBT3904		
Q2,Q3	TSBT3906-B	TR CHIP	SBT3906		
R2,R6,R9,FB9, FB11,FB12,R12, FB13,FB14,R40, R41	HRFS000JBA	R CHIP	0 ohm 1/16W J 1608		
R1	HRFS330JBA	R CHIP	33 ohm 1/16W J 1608		
R17,R18,R19	HRFS750JBA	R CHIP	75 ohm 1/16W J 1608		
R3,R4,R5,R7, R8,R10,R11, R13,R14,R15, R22,R32,R33, R42,R49,R50, R51,R52,R53, R57,R58	HRFS101JBA	R CHIP	100 ohm 1/16W J 1608		
R100	HRFS391JBA	R CHIP	390 ohm 1/16W J 1608		
R66,R70	HRFS471JBA	R CHIP	470 ohm 1/16W J 1608		
R65,R69	HRFS102JBA	R CHIP	1K ohm 1/16W J 1608		
R28	HRFS122JBA	R CHIP	1.2K ohm 1/16W J 1608		
R20	HRFS222JBA	R CHIP	2.2K ohm 1/16W J 1608		

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R29,R30,R31, R34,R39,R44, R45,R46,R47, R56,R61,R62, R64,R68	HRFS472JBA	R CHIP	4.7K ohm 1/16W J 1608		
R35	HRFS822JBA	R CHIP	8.2K ohm 1/16W J 1608		
R21,R43,R60	HRFS103JBA	R CHIP	10K ohm 1/16W J 1608		
R59,R63,R67	HRFS223JBA	R CHIP	22K ohm 1/16W J 1608		
R54,R55	HRFS473JBA	R CHIP	47K ohm 1/16W J 1608		
R27	HRFS104JBA	R CHIP	100K ohm 1/16W J 1608		
R36	HRFS105JBA	R CHIP	1M ohm 1/16W J 1608		
U1	1916433CL-	IC POWER	RT9164-33CL (TO-252 Package)		
U1	1A111733UC	IC REGULATOR	APL1117-33UC-TR (TO-252 Package)	A	
U3	1A1117E18	IC REGULATOR	AP1117E18A (SOT-223 Package)		
U6	1TSU16AJ--	IC SCALER(MSTAR)	TSU16AJ		
U7	1FDC6329L-	IC INTEGRATED LOADSWITCH	FDC6329L SUPERSOT TM-6		
U8	1AT24C16--	IC EEPROM (ATMEL)	AT24C16-10SI-2.5 (SOIC 8PIN)		
U9	97E6300230	MCU SOCKET	CCSD-44T-SM (44P-PLCC type)		
U9A	1WT61P4L44	MCU (WELTREND)	WT61P4L44		
Y1	5XJ14R318E	CRYSTAL QUARTZ	14.31818MHz XTAL_2 20pF DIP		
Y2	5XJ24----E	CRYSTAL QUARTZ	24MHz XTAL_2 22pF DIP		
Y2	5XJ24R000E	CRYSTAL QUARTZ	24MHz XTAL_2 20pF DIP	A	
PCB	97E6500870-02	HL710S AD PCB	Double Side (119*80)		
	97E8800500	PANEL HARNESS	30PIN-TO-30PIN HARNESS with core		
	97E8800510	PANEL HARNESS	30PIN-TO-30PIN HARNESS with core	A	
	97E8804012	PANEL HARNESS	30PIN-TO-30PIN HARNESS with core	A	
	97E8804040	PANEL HARNESS	30PIN-TO-30PIN HARNESS with core	A	

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	97E8804041	PANEL HARNESS	30PIN-TO-30PIN HARNESS with core	A	
	97E8804042	PANEL HARNESS	30PIN-TO-30PIN HARNESS with core (SAMSUNG E6 Panel)	A	
	97E8804043	PANEL HARNESS	30PIN-TO-30PIN HARNESS with core (SAMSUNG E6 Panel)	A	
	97E8804011	POWER HARNESS	9P-TO-9P HARNESS (220mm)		
	97E8804024	POWER HARNESS	9P-TO-9P HARNESS (220mm)	A	
	97E8804010	Function HARNESS	7P-TO-7P HARNESS (200mm)		
	97E8804023	Function HARNESS	7P-TO-7P HARNESS (200mm)	A	

▶ HL710S FUNCTION B/D Part List

Location	Parts Code	Parts Name	Parts Spec.	A/J	Remark
PCB	97E6500330-02	FUNCTION_PCB	1 LAYER(155*13.7mm) HL710S		
CON1	97E6200734	CONN WAFER	IBP-07R-20T(GIL-S-7P-S2L2)		
D1,D2,D4	DZN4148---	DIODE,DIP	1N4148 (DO-35, 3.8 X 1.8)		
LED1	DLSAM3270-	LED	LED 3Φ 3PIN(2.54-pitch)		
R1,R2	RD-8Z152JS	R CARBON FILM	1/8W 1.5K OHM J		
R3	RD-8Z302JS	R CARBON FILM	1/8W 3K OHM J		
SW1,SW2, SW3,SW4, SW5	5S51280A6-	TACT SWITCH	1280A6 (KNOB-5mm)		

► Inverter & POWER BD Part List(SHI1520WY)

NO	LEVEL	DESCRIPTION	SPECIFICATION	LOC.
1	1	INVERTER SET BOX		
2	2	PACKING ASS'Y		
3	2	CARTON BOX	DW1	A3030206
4	2	CARTON PAD 'A'	SW1	A3030207
5	2	CARTON PAD 'B'	SW1	A3030208
6	2	OPP TAPE	W 50mm	
7	2	BAR CORD,	PRINTING CARBON RIBBON	BAR CORD,
8	2	MANUAL INSERT ASS'Y		
9	3	INLET ASS'Y		SHE-0010-C001
10	4	INLET	250V 10A	
11	4	RING TERMINAL	@4.3	
12	4	HISHI TUBE	@14, BLACK	
13	4	WIRE-GRN/YEL	UL1015-18AWG	
14	3	CONNECTOR	CON-8P	CN1
15	3	CONNECTOR	CON-2P	CN2,3
16	3	GND PIN	lithograph 0.5t	SHE-9001-X001
17	3	FUSE	FUSE, 250VAC, T3.15AH,5Φ*20mm	F101
18	3	IC	DIP-4, OPTO, CTR:130~260%	PC101
19	3	IC	DIP-20, PWM	U1
20	3	IC	TO-92, SHUNT, REF:2.5V	IC102
21	3	SCR	TO-92, 400V/0.8A	SCR2
22	3	DIODE	Lead Type, SCHOTTKY, 100V/5A	D105
23	3	DIODE	Lead Type, SCHOTTKY, 60V/5A	D106
24	3	DIODE	BRIDGE, 600V/2A	BD101
25	3	RES	Mini, MOR, 47KΩ/1W/5%	R104
26	3	RES	RW, 0.7Ω/1W/5%	R107
27	3	RES	CF, 47Ω/(1/8)W/5%	R105
28	3	LINE FILTER	16mH, 1.0A	LF101
29	3	TRANSFORMER	ADAPTOR	T101,
30	3	TRANSFORMER	INVERTER	T1
31	3	RES	MOF RES, 1W 47KΩ 5%	R104,
32	3	THERMISTOR	5D-9	TH101
33	3	CE-CAP	CE-CAP, 1000PF 1KV	C106
34	3	CE-CAP	HIGH, 47PF 3KV	C11,C15
35	3	CE-CAP	HIGH, 6PF 3KV	C12,17,23,24
36	3	ML-CAP	100V,392,5mm	C19,25
37	3	EL-CAP	68uF 400V, 18*25	C105
38	3	EL-CAP	470uF 25V 10*16 BULK	CEL1

HL510S/HL710S Service Manual

NO	LEVEL	DESCRIPTION	SPECIFICATION	LOC.
39	3	X-CAP	0.1uF 300V(275V)	C102
40	3	X-CAP	0.22uF 300V(275V)	C101
41	3	VARISTER	471K	RV101
42	3	Y-CAP	102, 250VAC, Y1 NOFORMING	C103,C104
43	3	Y-CAP	332, 250VAC, Y1 NOFORMING	C114
44	3	HEAT SINK ASS'Y A (HS1)		
45	3	HEAT SINK		SHE-9001-X010
46	3	FET	TO-220, 700V/4.6A	Q101
47	3	SCREW-PWH	PHI 3X8, BRT,Zinc White, M/T/T	FOR Q101
48	4	SMT _ AUTO INSERT ASS'Y		
49	4	MOSFET	N-P CHANNEL, DIP-8PIN	Q3,4
50	4	TR	SOT-23, PNP,50V/100mA	Q2
51	4	TR	SOT-23, NPN,50V/100mA	Q1
52	4	IC	SO-8pin, PWM,	IC01
53	4	S/W-DIODE	COMMON CATHODE, SOT-23	D1,10,11,12
54	4	DIODE	SOT-23, ZENER, 5.6V/150mW	ZD1,2,D5
55	4	DIODE	SOT-23, ZENER, 12V/200mW	ZD3
56	4	SMD_RES	1206, 47Ω, 5%, 1/4W	R06,R08
57	4	SMD_RES	1206, 1KΩ, 1%, 1/4W	R106
58	4	SMD_RES	1206, 27KΩ 5%	R01,R02
59	4	SMD_RES	1206, 330KΩ, 5%, 1/4W	R111,R112,R113
60	4	SMD_RES	0805, 2.2KΩ 5%	R108
61	4	SMD_RES	0805, 150Ω 1%	R016
62	4	SMD_RES	0805, 2KΩ 1%	R015,R7
63	4	SMD_RES	0805, 1.2KΩ 1%	R011
64	4	SMD_RES	0805, 1.5KΩ 1%	R017
65	4	SMD_RES	0805, 4.7KΩ 1%	R18
66	4	SMD_RES	0805, 0Ω 5%	R012,03,J01
67	4	SMD_RES	0805, 1KΩ 1%	R010,6,20
68	4	SMD_RES	0805, 33KΩ 1%	R018,R3
69	4	SMD_RES	0805, 10Ω 1%	R10,13
70	4	SMD_RES	0805, 20Ω 1%	R2
71	4	SMD_RES	0805, 56Ω 1%	R17
72	4	SMD_RES	0805, 180Ω 1%	R16
73	4	SMD_RES	0805, 300Ω 1%	R19
74	4	SMD_RES	0805, 3.3KΩ 1%	R11
75	4	SMD_RES	0805, 10KΩ 1%	R5,8,9
76	4	SMD_RES	0805, 36KΩ 1%	R14,15
77	4	SMD_RES	0805, 1MΩ 1%	R21
78	4	SMD_RES	0805, 56KΩ 1%	R12
79	4	SMD_MLCC	0805,0.0022uF 50V X7R	C01,C02
80	4	SMD_MLCC	0805, 0.001uF 25V NPO	C03

NO	LEVEL				DESCRIPTION	SPECIFICATION	LOC.
81				4	SMD_MLCC	0805, 0.1uF 50V X7R	C04,18,4,5,16,20
82				4	SMD_MLCC	0805, 1uF 25V X5R(Z)	C1,2,9,22
83				4	SMD_MLCC	0805, 0.047uF 50V X7R	C8,13
84				4	SMD_MLCC	0805, 0.01uF 25V X7R	C14,21
85				4	SMD_MLCC	0805, 220pF 25V X7R	C7
86				4	SMD_MLCC	0805, 0.22uF 25V X7R	C3
87				4	SMD_MLCC	0805,10uF 16V X7R(Z)	C10
88				4	SMD_MLCC	0805, 0.0056uF 25V NPO	C6
89				5	AUTO INSERT ASS'Y		
90				5	DIODE	UF1007	D102,D103
91				5	EL-CAP	EL-CAP, 47uF 25V 5*11	C107
92				5	EL-CAP	EL-CAP, 680uF 16V 10*16	C011,012
93				5	EL-CAP	EL-CAP, 470uF 25V 10*16	C09
94				5	JUMPER	0.6*0.8mm	L103,R105
95				5	JUMPER	06*6mm	J19,20
96				5	JUMPER	06*10mm	J10,11,12,18,15,23,L101
97				5	JUMPER	06*18mm	J17
98				5	JUMPER	06*12mm	J14,24
99				5	JUMPER	0.6*15mm	J13,16,21,22
100				5	PCB	SHI1520WY Rev: 0.1 1.6mm FR-1	

► Inverter & POWER BD Part List(FLF1521-04A)

NO.	Ref.	Part Type	1st. Vendor	2nd. Vendor
1	LF101	LFL001A	DONGHEUNG	GET
2	PC101	LTV-817B-M,PC817,TCET1103	LITON	Sharp,Vishay
3	Q101	SPA04N60C3-A,STP5NC70ZFP	INFINEON	ST
4	BD101	KBP206G	Diodes	TSC,SHS
5	D104	SB560	VISHAY-GS	Diodes
6	D103	SF5LC20U,FMX12S	SHINDENGEN	SANGKEN,DIODES
7	C105	CE82u400V85SD,SHL,GS	SAMYOUNG	LUBICON,PARTSNIC
8	C103,104	KNB1560MKP-334K	ISKRA	PILCO,SUNGIL
9	VS1	VARISTOR 7D471	ILJIN(AMOTECH)	CNR,THINKING
10	C101,102	DG222Y1	DOOSAN	NRT,SEC
11	C114	DG472Y1	DOOSAN	NRT,SEC
12	C2	CE100U25V105RD,KM,KMG	SAMYOUNG	LUBICON,PARTSNIC
13	CN100	SS-120, BCP-031S,7003,ST-01	I-SHENG,BM	RONGFENG,SOLTEAM
14	CN101	GIL-S-8P-S2T2-EF	LG	YEONHO,MOLEX,JST
15	IC103	ICE2AS01	INFINEON	
16	CN1,2	20032WR-05A00	YEONHO	MOLEX,JST
17	T101	TRSL002A	DONGHEUNG	GET
18	T1	TRS1501D-DIP	DONGHEUNG	GET
19	U1,2	AP4532,ZXMC3A16,FDS8958,ELM14600	APE,FAIRCHILD	ZETEX,ELM
20	U3	BIT3105	BITEK	
21	Q4,105	KRC407,DTC114YUA	Rohm, Diodes	KEC,AUK
22	Q3	KRA307,DTA114YUA	Rohm, Diodes	KEC,AUK
23	D101	RGF10J, RS1J	ZOWIE,DIODES	TSC,PANJIT
24	D106	RLS4148,LL4148	Rohm, Diodes	KEC,AUK
25	D3	DAN217,BAV99	Rohm, Diodes	KEC,AUK
26	D1,2	UDZS5.6B,BZT52C5V6S-7	Rohm, Diodes	KEC,AUK
27	ZD103	UDZS20B,BZT52C20V0S	Rohm, Diodes	KEC,AUK
28	C1	CC106Z10V3216	SAMSUNG,TDK	TAIYO YUDEN,MURATA
29	C8	CC473K50V2012	SAMSUNG,TDK	TAIYO YUDEN,MURATA
30	C112,113	CC471K50V2012	SAMSUNG,TDK	TAIYO YUDEN,MURATA
31	C13	CC271K50V2012	SAMSUNG,TDK	TAIYO YUDEN,MURATA
32	C6,7,12,122,125	CC103K50V2012	SAMSUNG,TDK	TAIYO YUDEN,MURATA
33	C3,11	CC104K50V2012	SAMSUNG,TDK	TAIYO YUDEN,MURATA
34	C10	CC102K50V2012	SAMSUNG,TDK	TAIYO YUDEN,MURATA
35	C4,119	CC105Z16V2012	SAMSUNG,TDK	TAIYO YUDEN,MURATA

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NO.	Ref.	Part Type	1st. Vendor	2nd. Vendor
36	R13	CR1608J471	SAMSUNG,TDK	Rohm,JEIL
37	R6,8	CR1608J474	SAMSUNG,TDK	Rohm,JEIL
38	R12	CR1608J513	SAMSUNG,TDK	Rohm,JEIL
39	R11	CR1608J114	SAMSUNG,TDK	Rohm,JEIL
40	R2,3	CR1608J183	SAMSUNG,TDK	Rohm,JEIL
41	R10	CR1608J103	SAMSUNG,TDK	Rohm,JEIL
42	R15	CR1608J472	SAMSUNG,TDK	Rohm,JEIL
43	R128	CR2012J561	SAMSUNG,TDK	Rohm,JEIL
44	R123,126	CR2012F1801	SAMSUNG,TDK	Rohm,JEIL
45	R104,121	CR2012J181	SAMSUNG,TDK	Rohm,JEIL
46	R119,122	CR2012J332	SAMSUNG,TDK	Rohm,JEIL
47	R107	CR2012J183	SAMSUNG,TDK	Rohm,JEIL
48	R109,114,117	CR2012J100	SAMSUNG,TDK	Rohm,JEIL
49	R127	CR2012F6801	SAMSUNG,TDK	Rohm,JEIL
50	R115,116	CR2012J470	SAMSUNG,TDK	Rohm,JEIL
51	R124	CR2012F3002	SAMSUNG,TDK	Rohm,JEIL
52	R111	CR3216J100	SAMSUNG,TDK	Rohm,JEIL
53	R134,135	CR3216J124	SAMSUNG,TDK	Rohm,JEIL
54	R101,102,103	CR3216J334	SAMSUNG,TDK	Rohm,JEIL
55	C115,116	CE470u25V105RD,KM,KMG	SAMYOUNG	LUBICON,PARTNIC
56	C118	CE470u10V105RD,KM,KMG	SAMYOUNG	LUBICON,PARTNIC
57	C117	CE1000u10V105RD,KM,KMG	SAMYOUNG	LUBICON,PARTNIC
58	C121	CE1U50V85SHL,SD,GS	SAMYOUNG	LUBICON,PARTNIC
59	C110	CE47U50V85SHL,SD,GS	SAMYOUNG	LUBICON,PARTNIC
60	IC102	TL431A	Fair Child	WOOSUK,Diodes
61	L101,102	INDL001A (3.3UH)	DONGHEUNG	GET,Abco
62	BC102	EBFL001A	DONGHEUNG	GET
63	C5	CL180K3K	DOOSAN	DONGIL,NEWCON
64	C111	222K 1KV	DOOSAN	DONGIL,NRT
65	R113	1W 0.7Ω F	JEIL	SMART
66	R112	MORS 2W J 100K	JEIL	SMART
67	D102	PR1003, BYT42M, FR104	Diodes,VISHAY	SHS
68	TH101	SCK08053MS,NTC 5D-9	SAMKYUNG,DSC	Thinking
69	F101	SR-5 3.15A, 663-3.15	SAVE FUZE	RHEETEL
70	Natural, Live of CN100	BEYP-160(EYE-LET)	BM	
71	P.W.B CEM-1	PL1521C04	DASAN	DONGMYUNG

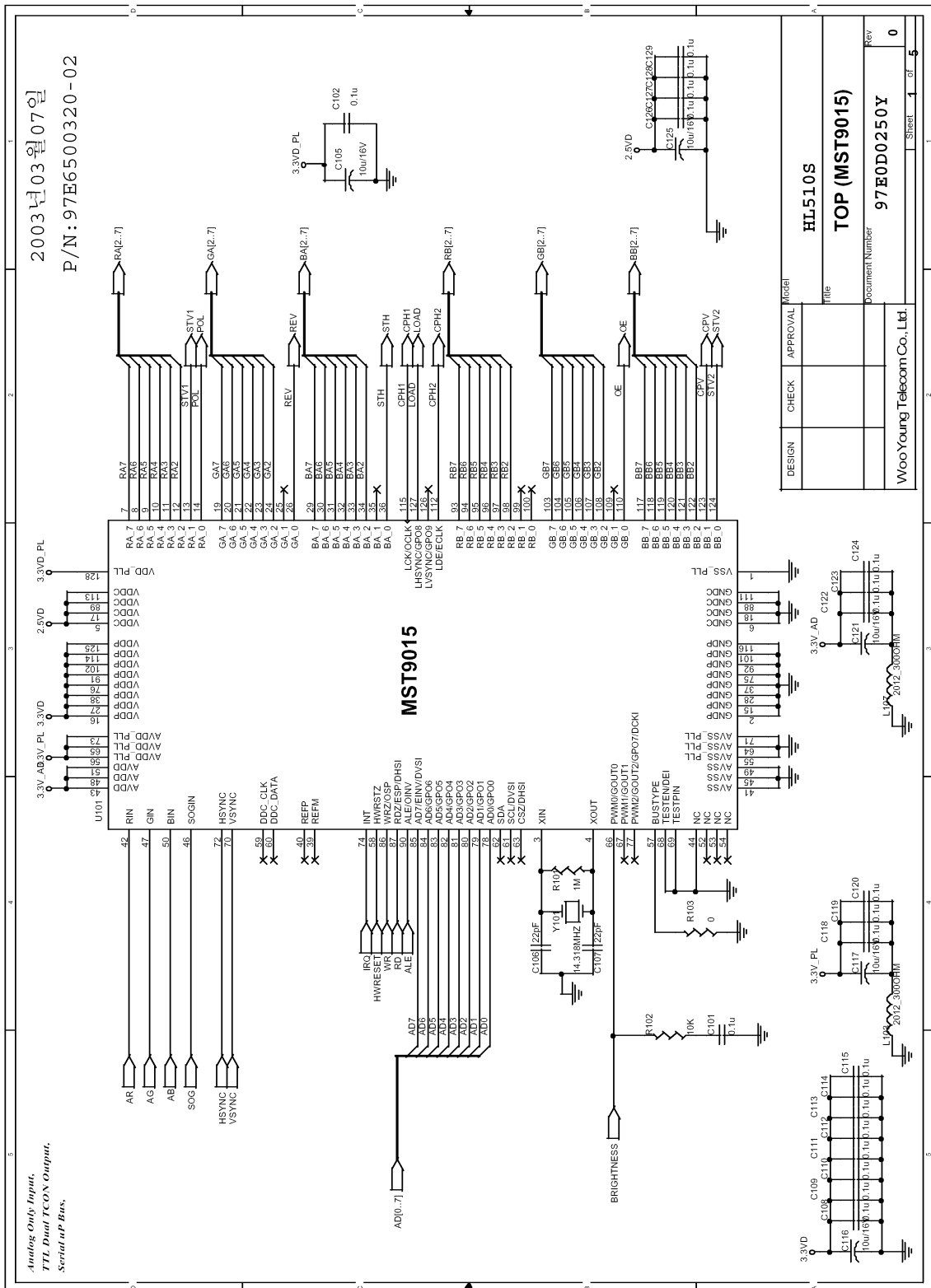
► Inverter & POWER BD Part List(FLF1742-04A)

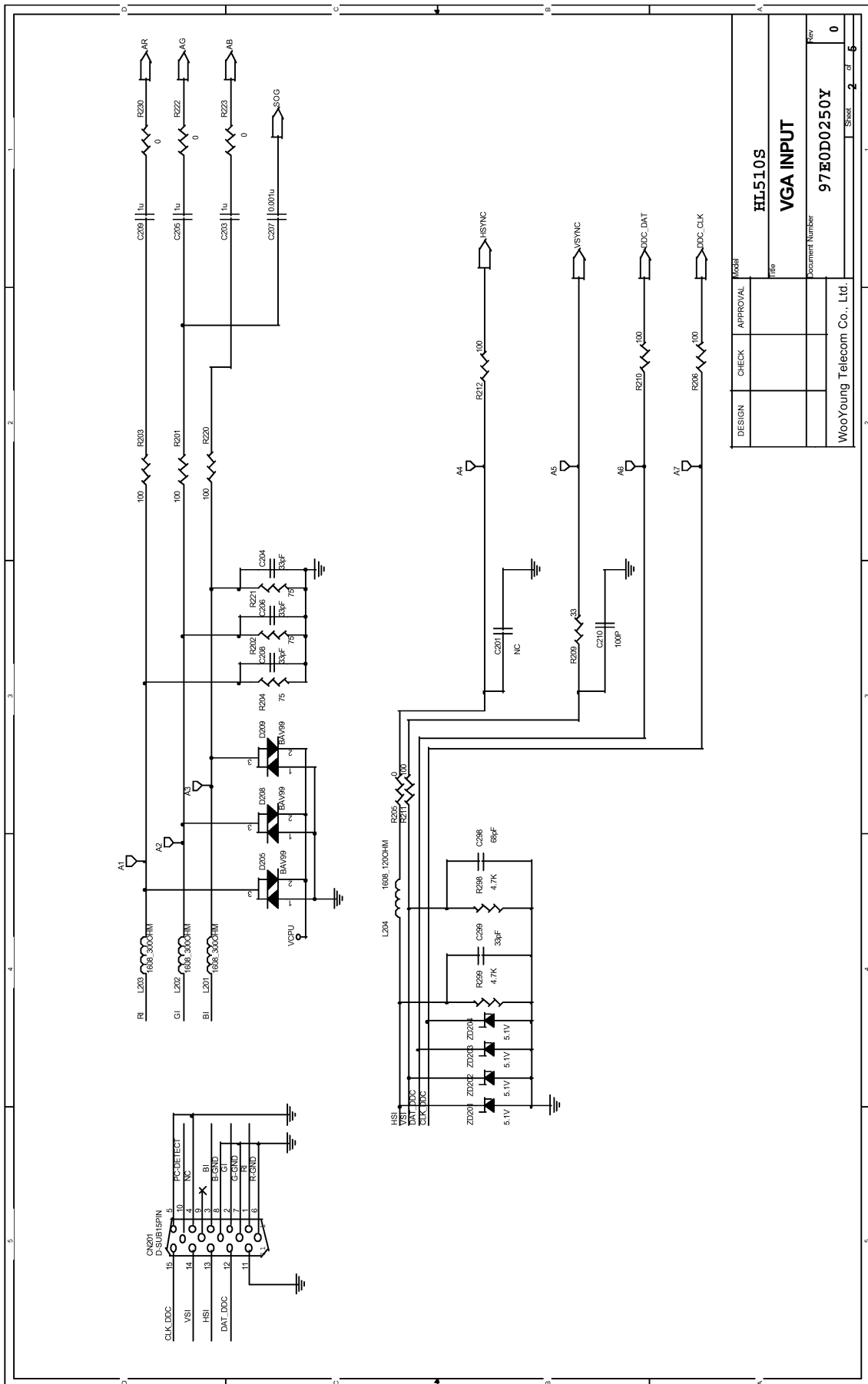
NO.	Ref.	PART TYPE	1st. Vendor	2nd. Vendor
1	LF101	LFL002A	DONGHEUNG	GET
2	PC101	LTV-817B-M,PC817,TCET1103	Sharp,Fairchild	LITON,Vishay
3	Q101	SPA04N60C3-A,STP5NC70ZFP	INFINEON	ST
4	BD101	KBP206G	Diodes	TSC
5	D104,105	SB560	VISHAY	DIODES,G.S
6	D103	STPS10150CT,MBR20100CT	ST	Diodes,VISHAY
7	C105	CE82u400V85SD,SHL,GS	SAMYOUNG	LUBICON, PARTSNIC
8	C103,104	KNB1560MKP-334K	ISKRA	PILCO,SUNIL
9	VS1	VARISTOR 7D471	ILJIN(AMOTECH)	CNR
10	C101,102	DG222Y1	DOOSAN, DONGIL	NRT,SEC
11	C114	DG472Y1	DOOSAN, DONGIL	NRT,SEC
12	C2	CE220U25V105LXZ,WL,RT	SAMYOUNG	LUBICON, PARTSNIC
13	CN100	SS-120, BCP-031S,7003,ST-01	I-SHENG,BM	RONG FENG,SOLTEAM
14	CN101	GIL-S-9P-S2T2-EF	LG	
15	IC103	ICE2AS01	INFINEON	
16	CN1,2,3,4	35002WR-02, S02-BDS-1	YEONHO	MOLEX,JST
17	T101	TRSL002B	DONGHEUNG	GET
18	T1,2	TRS1801H-DIP	DONGHEUNG	GET
19	U1,2	FDS8958,SI4562DY,ELM14600AA	Fairchild	Vishay,ELM
20	U3	BIT3105	BITEK	
21	Q2,105	KRC407,DTC114YUA	Rohm, Diodes	KEC,AUK
22	Q1	KRA307,DTA114YUA	Rohm, Diodes	KEC,AUK
23	D101	RGF10J, RS1J	ZOWIE,DIODES	TSC,PANJIT
24	D4,106	RLS4148,LL4148	Rohm, Diodes	KEC,VISHAY
25	D3	DAN217,BAV99	Rohm, Diodes	KEC,AUK
26	D1,2	UDZS5.6B,BZT52C5V6S-7	Rohm, Diodes	KEC,AUK
27	ZD101	UDZS18B,BZT52C18V0S	Rohm, Diodes	KEC,AUK
28	ZD103	UDZS20B,BZT52C20V0S	Rohm, Diodes	KEC,AUK
29	Q4,5	RK7002, 2N7002, STK7002	Rohm, Diodes	KEC,AUK
30	C1,18	CC106Z10V3216	Rohm,JEIL	SAMSUNG,TDK
31	C8	CC473K50V2012	Rohm,JEIL	SAMSUNG,TDK
32	C112,113	CC471K50V2012	Rohm,JEIL	SAMSUNG,TDK
33	C13	CC271K50V2012	Rohm,JEIL	SAMSUNG,TDK
34	C6,7,12,122,125	CC103K50V2012	Rohm,JEIL	SAMSUNG,TDK
35	C11,14	CC104K50V2012	Rohm,JEIL	SAMSUNG,TDK
36	C3,4,16,119	CC105Z16V2012	Rohm,JEIL	SAMSUNG,TDK
37	R14	CR1608J621	Rohm,JEIL	SAMSUNG,TDK
38	R13	CR1608J102	Rohm,JEIL	SAMSUNG,TDK
39	R15,17,18,20	CR1608J103	Rohm,JEIL	SAMSUNG,TDK
40	R2,3	CR1608J183	Rohm,JEIL	SAMSUNG,TDK

NO.	Ref.	PART TYPE	1st. Vendor	2nd. Vendor
41	R12	CR1608J433	Rohm,JEIL	SAMSUNG,TDK
42	R23	CR1608J472	Rohm,JEIL	SAMSUNG,TDK
43	R7	CR1608J753	Rohm,JEIL	SAMSUNG,TDK
44	R11	CR1608J124	Rohm,JEIL	SAMSUNG,TDK
45	R21	CR1608J224	Rohm,JEIL	SAMSUNG,TDK
46	R8,10	CR1608J105	Rohm,JEIL	SAMSUNG,TDK
47	R24,25	CR2012J221	Rohm,JEIL	SAMSUNG,TDK
48	R128	CR2012J561	Rohm,JEIL	SAMSUNG,TDK
49	R16	CR2012J102	Rohm,JEIL	SAMSUNG,TDK
50	R22	CR2012J122	Rohm,JEIL	SAMSUNG,TDK
51	R123,126	CR2012F1801	Rohm,JEIL	SAMSUNG,TDK
52	R140	CR2012J000	Rohm,JEIL	SAMSUNG,TDK
53	R104,121	CR2012J181	Rohm,JEIL	SAMSUNG,TDK
54	R119,122	CR2012J332	Rohm,JEIL	SAMSUNG,TDK
55	R107	CR2012J183	Rohm,JEIL	SAMSUNG,TDK
56	R109,114,117	CR2012J100	Rohm,JEIL	SAMSUNG,TDK
57	R115,116	CR2012J470	Rohm,JEIL	SAMSUNG,TDK
58	R127	CR2012F6801	Rohm,JEIL	SAMSUNG,TDK
59	R124	CR2012F2702	Rohm,JEIL	SAMSUNG,TDK
60	R111	CR3216J100	Rohm,JEIL	SAMSUNG,TDK
61	R134,135	CR3216J124	Rohm,JEIL	SAMSUNG,TDK
62	R101,102,103	CR3216J334	Rohm,JEIL	SAMSUNG,TDK
63	C115	CE680u25V105RD,KM	SAMYOUNG	LUBICON,PARTSNIC
64	C116	CE470u25V105RD,KM	SAMYOUNG	LUBICON,PARTSNIC
65	C118	CE470u10V105RD,KM	SAMYOUNG	LUBICON,PARTSNIC
66	C117	CE1000u10V105RD,KM	SAMYOUNG	LUBICON,PARTSNIC
67	C121	CE1U50V85SHL,SD,GS	SAMYOUNG	LUBICON,PARTSNIC
68	C110	CE47U50V85SHL,SD,GS	SAMYOUNG	LUBICON,PARTSNIC
69	IC102	TL431A	Fair Child	WOOSUK,Diodes
70	L101,102	INDL001A (3.3UH)	DONGHEUNG	GET,ABco
71	BC102	EBFL001A	DONGHEUNG	GET
72	C5,10	CL120K3K	DOOSAN	DONGIL,NEWCON
73	C111	222K 1KV	DOOSAN	DONGIL,NRT
74	R113	1W 0.62Ω F	JEIL	SMART
75	R112	MORS 2W J 100K	JEIL	SMART
76	D102	PR1003,BYT42M,FR104	Diodes,VISHAY	SUNGHO
77	TH101	SCK08053MS,NTC 5D-9	Thinking	SAMKYUNG
78	F101	SR-5 3.15A,663-3.15	SAVEFUZE	RHEETEL

CIRCUIT DIAGRAM

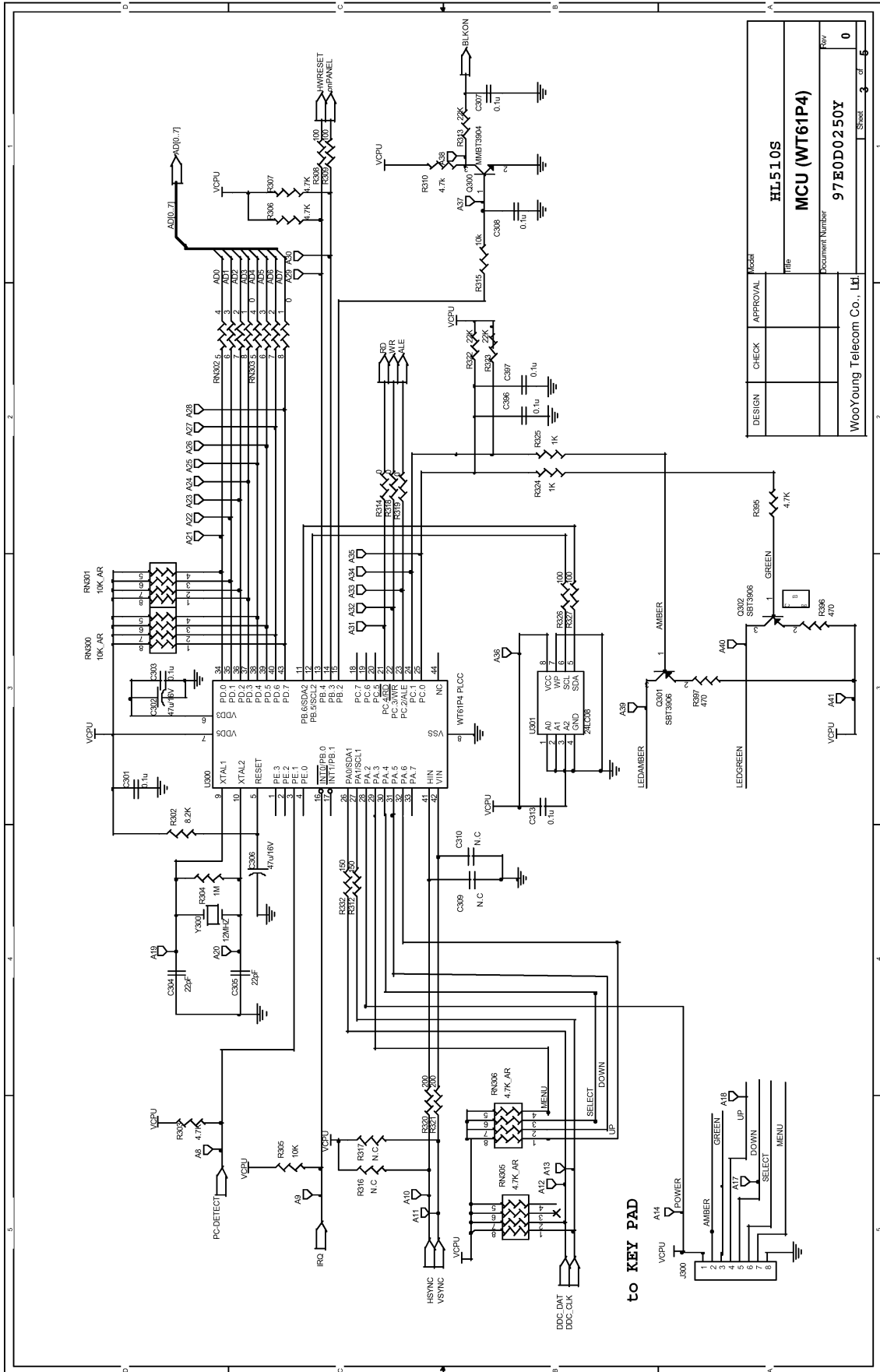
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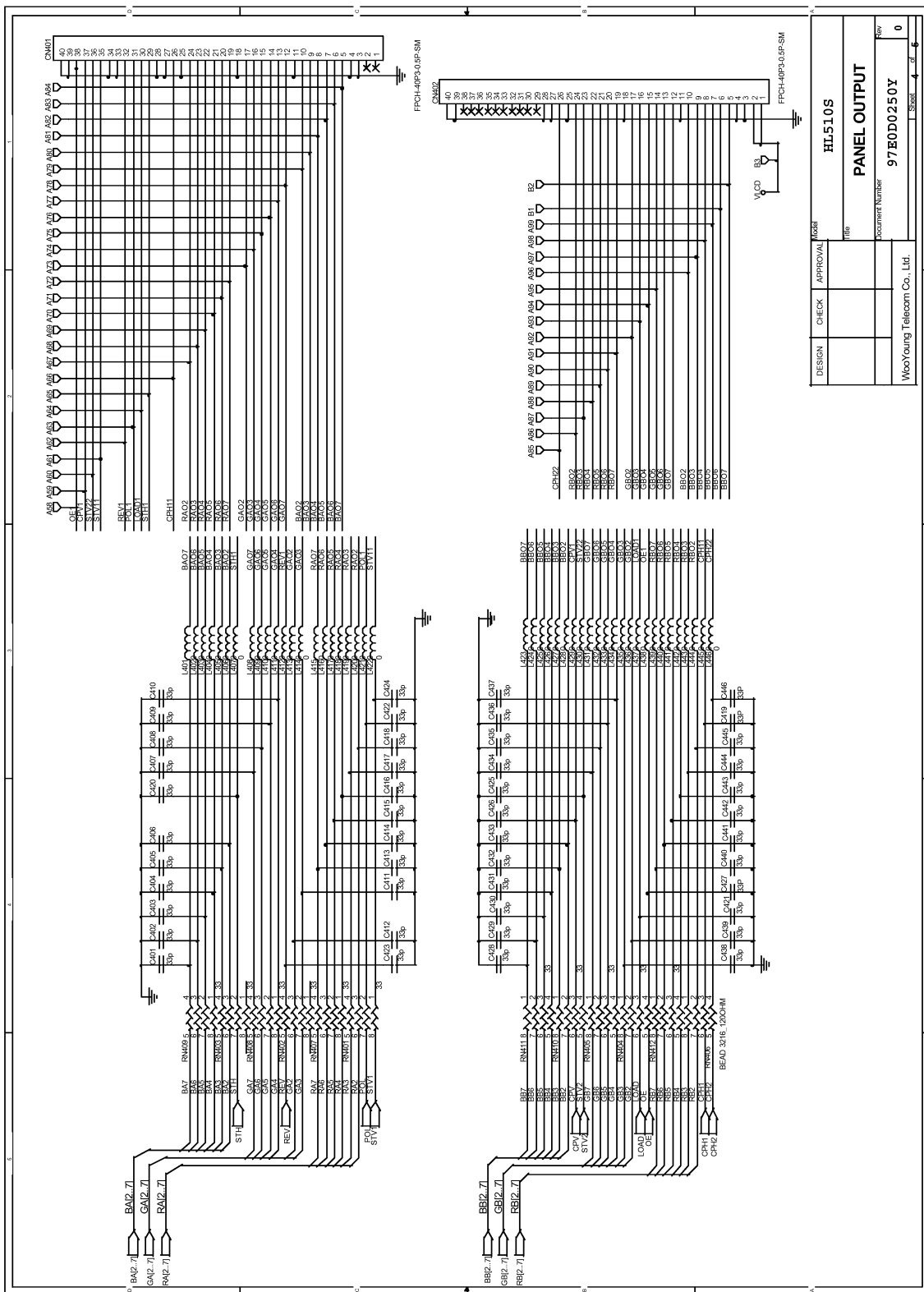


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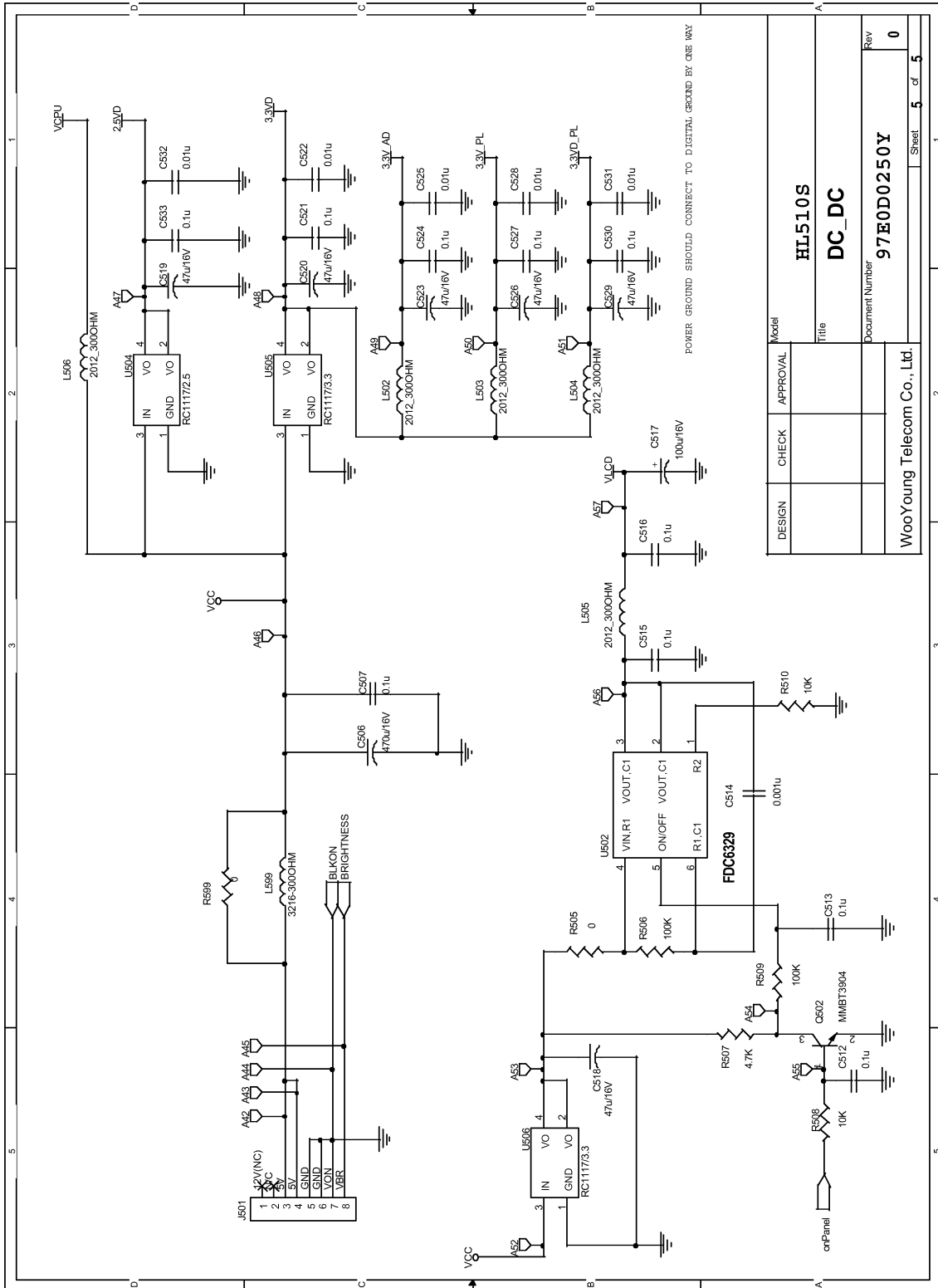
WooYoung Telecom Co., Ltd.



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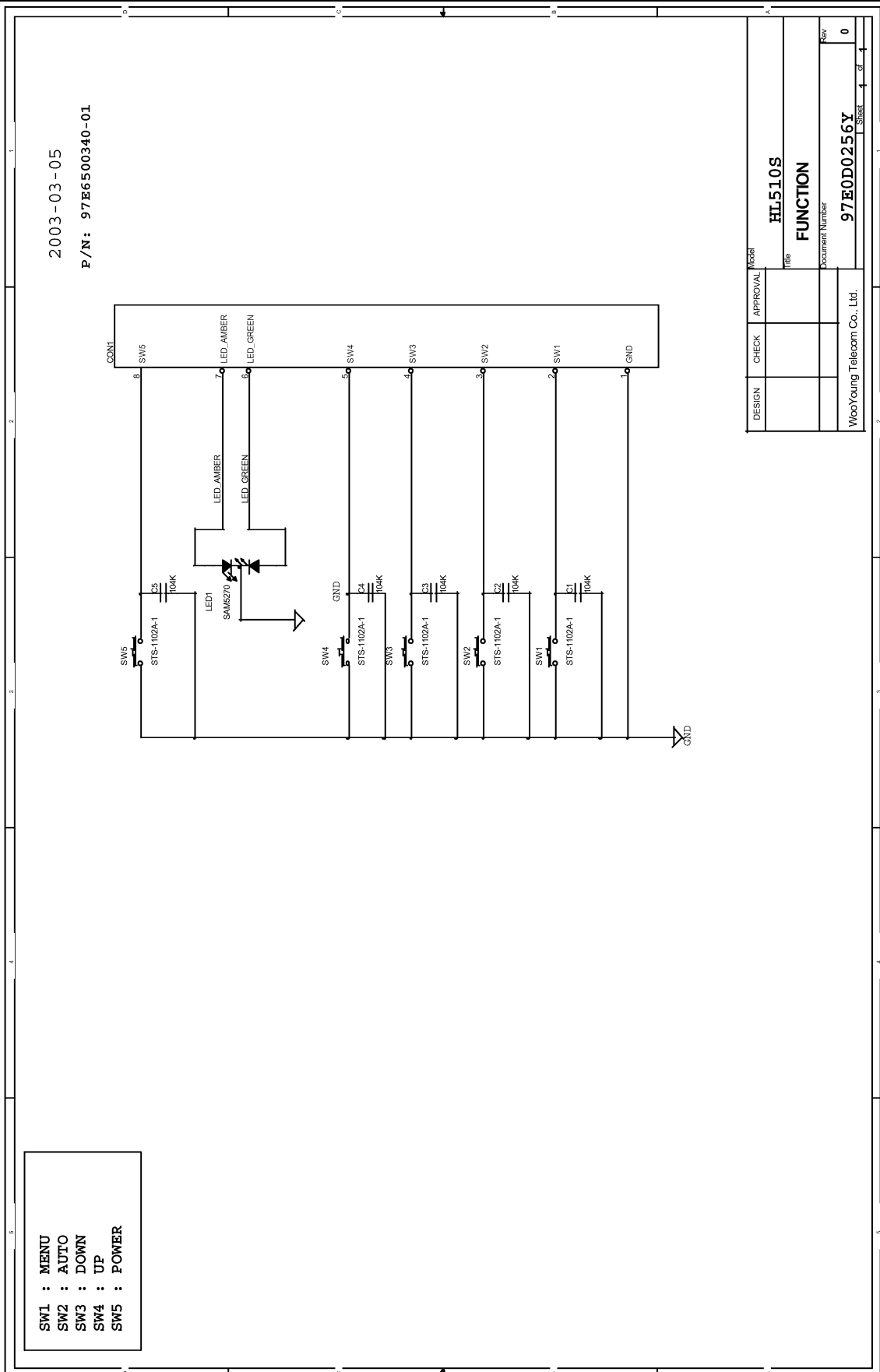


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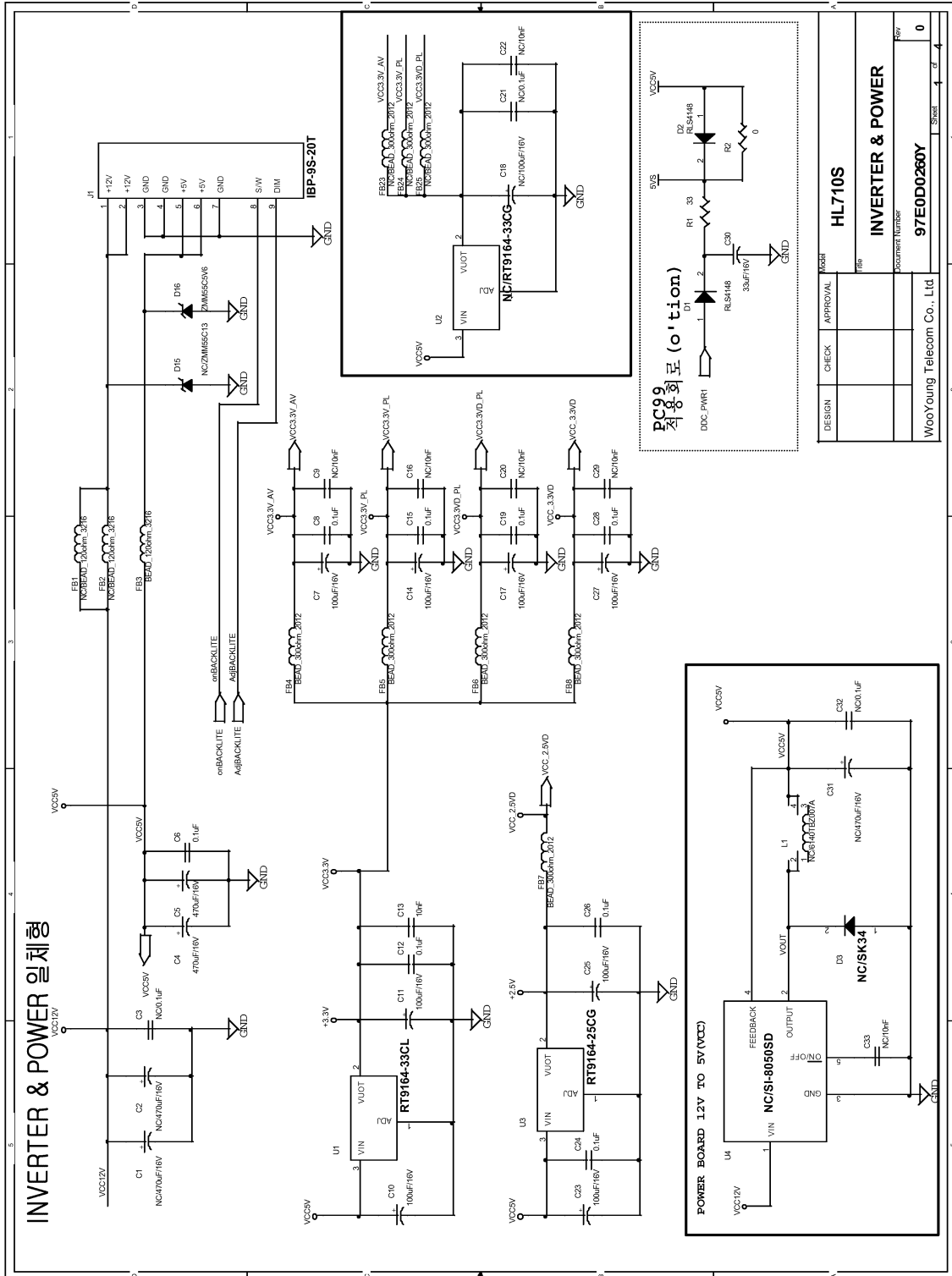


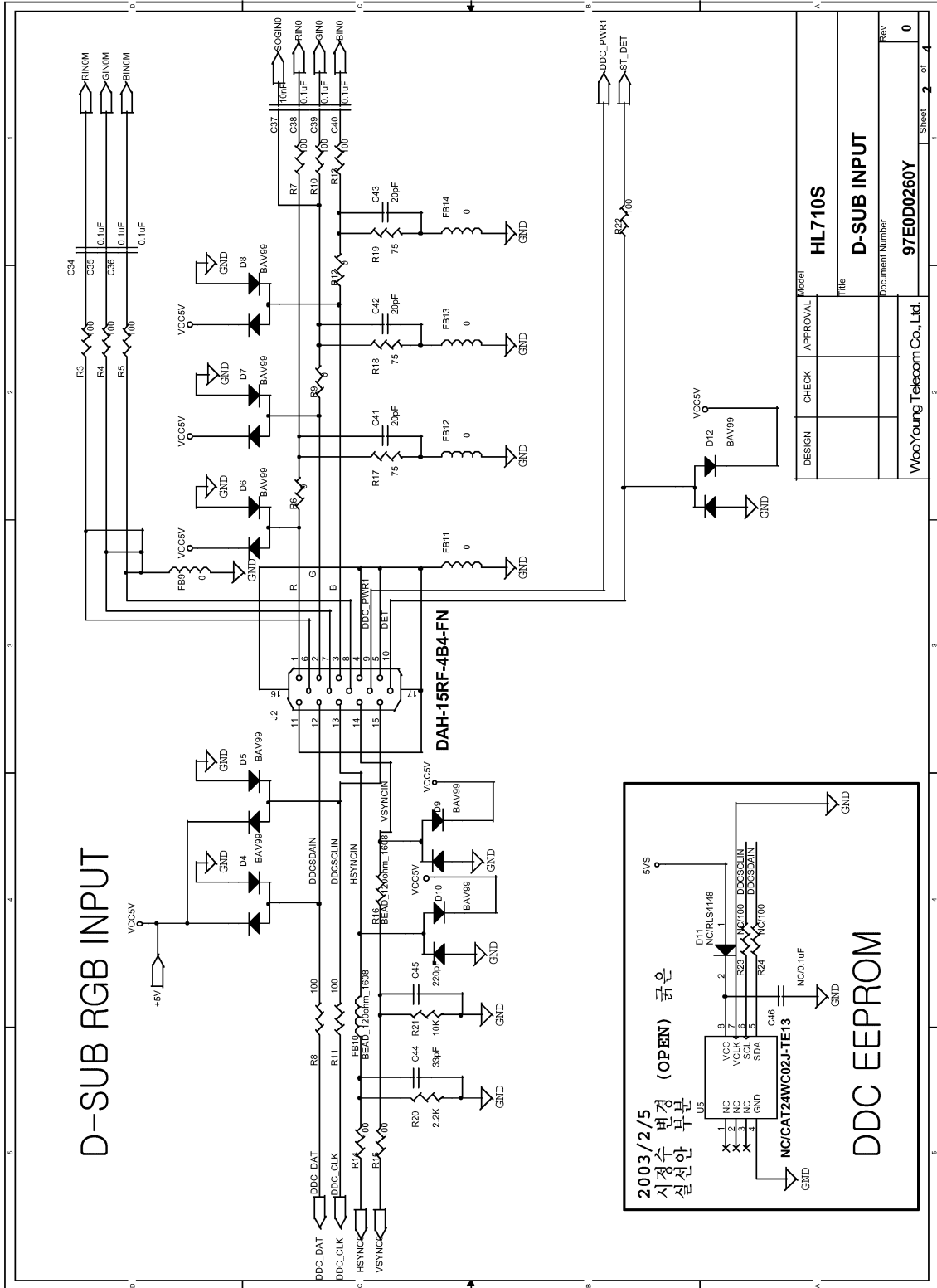
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WooYoung Telecom Co., Ltd.					

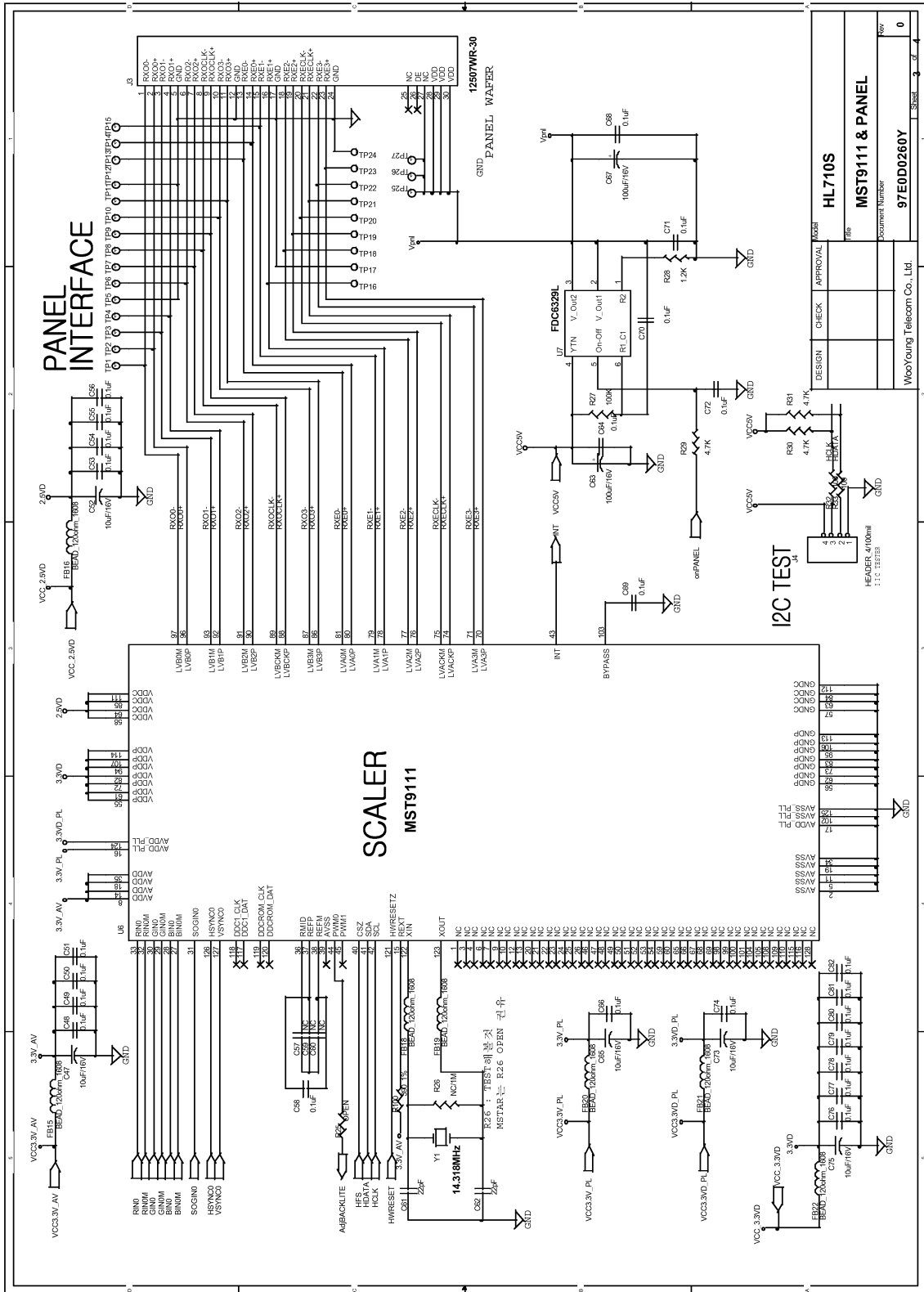
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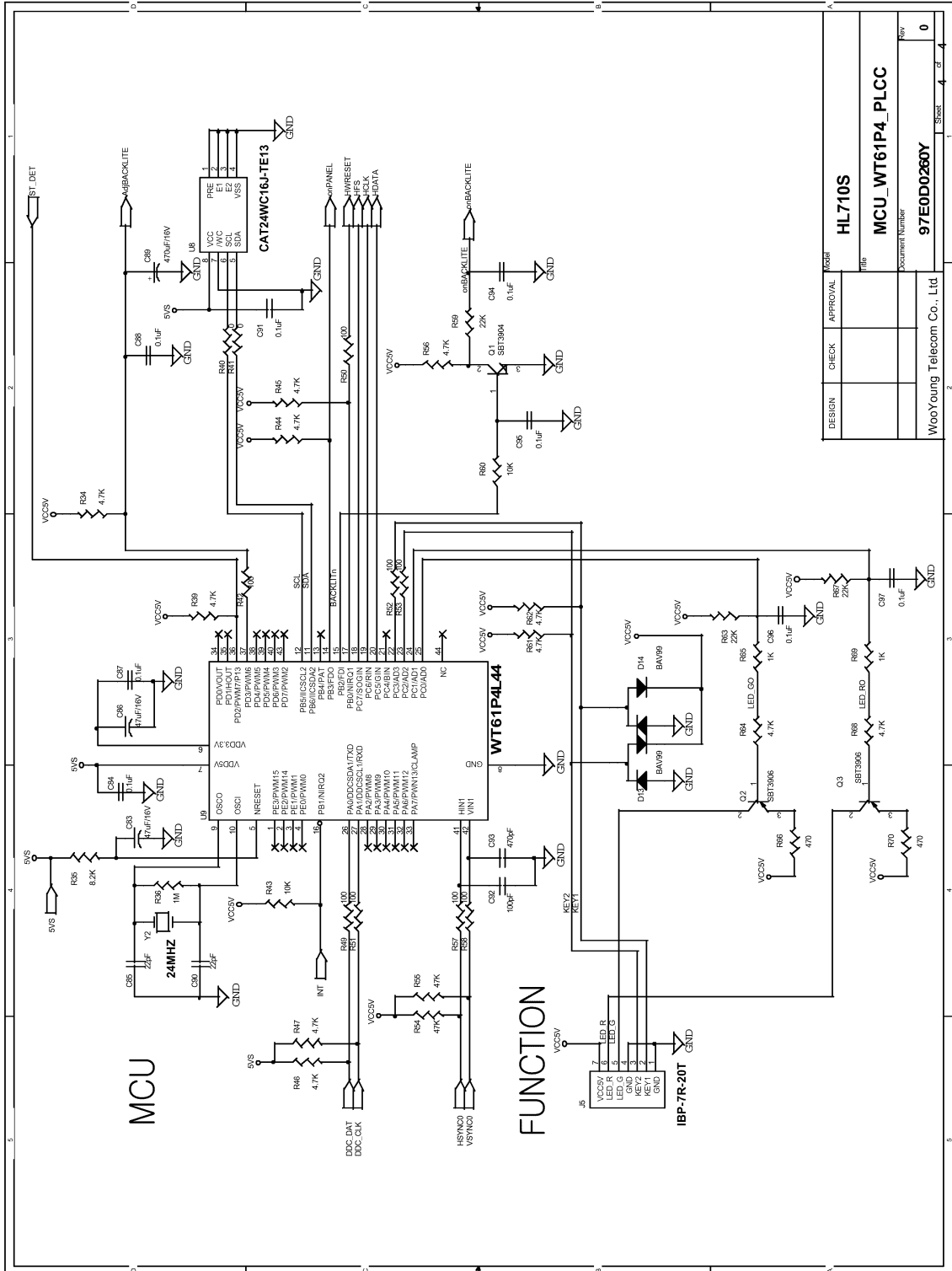


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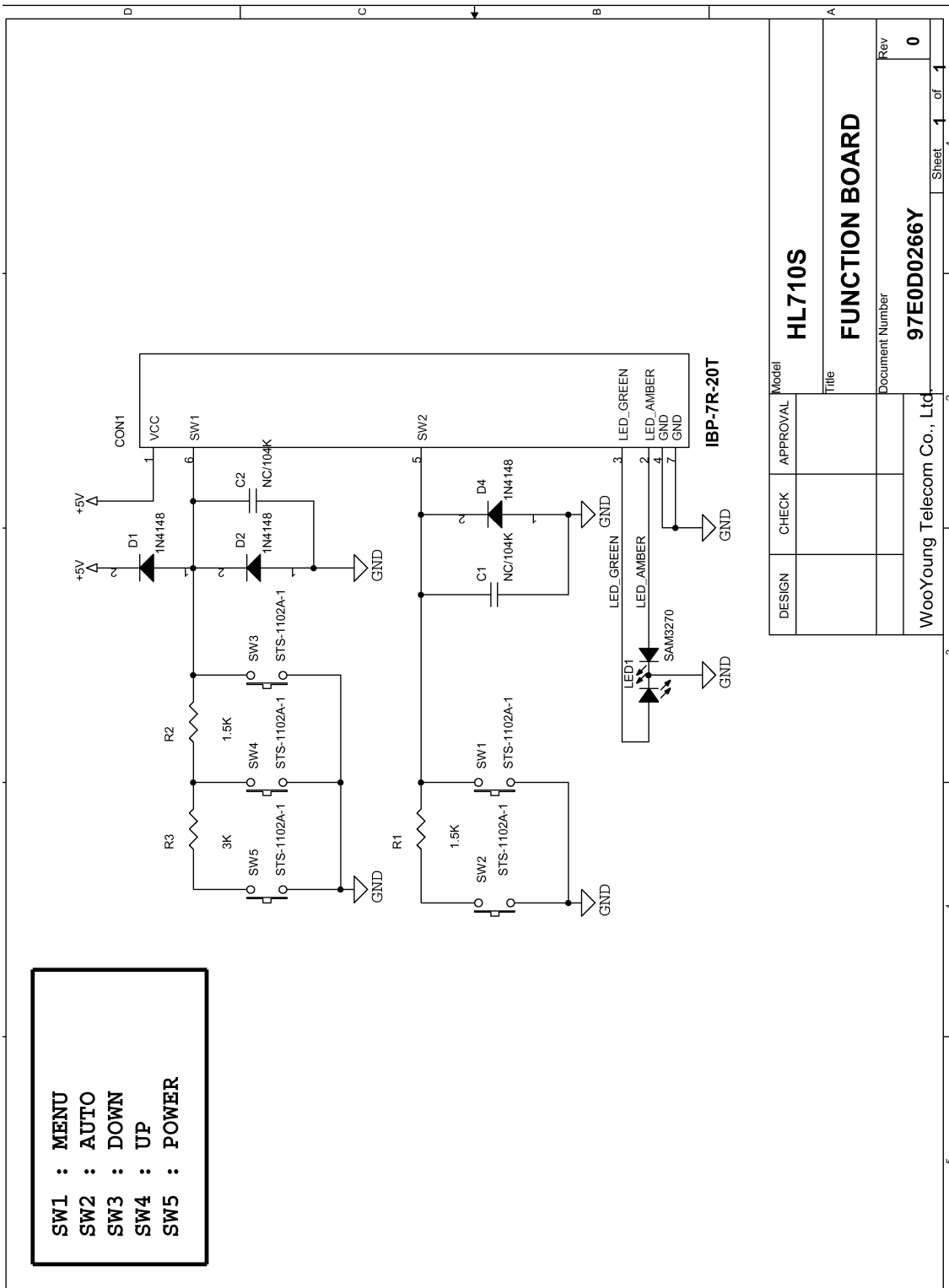






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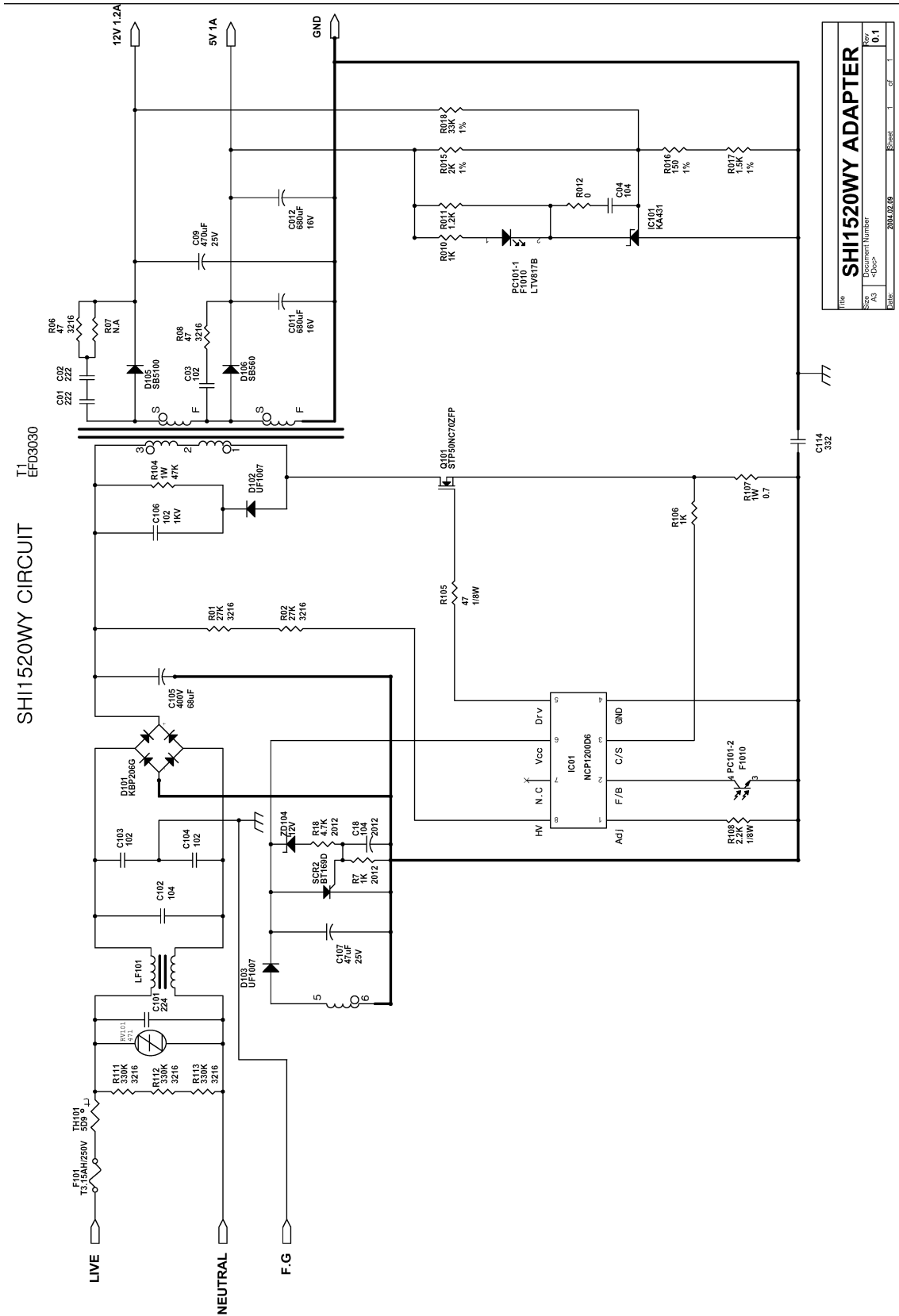
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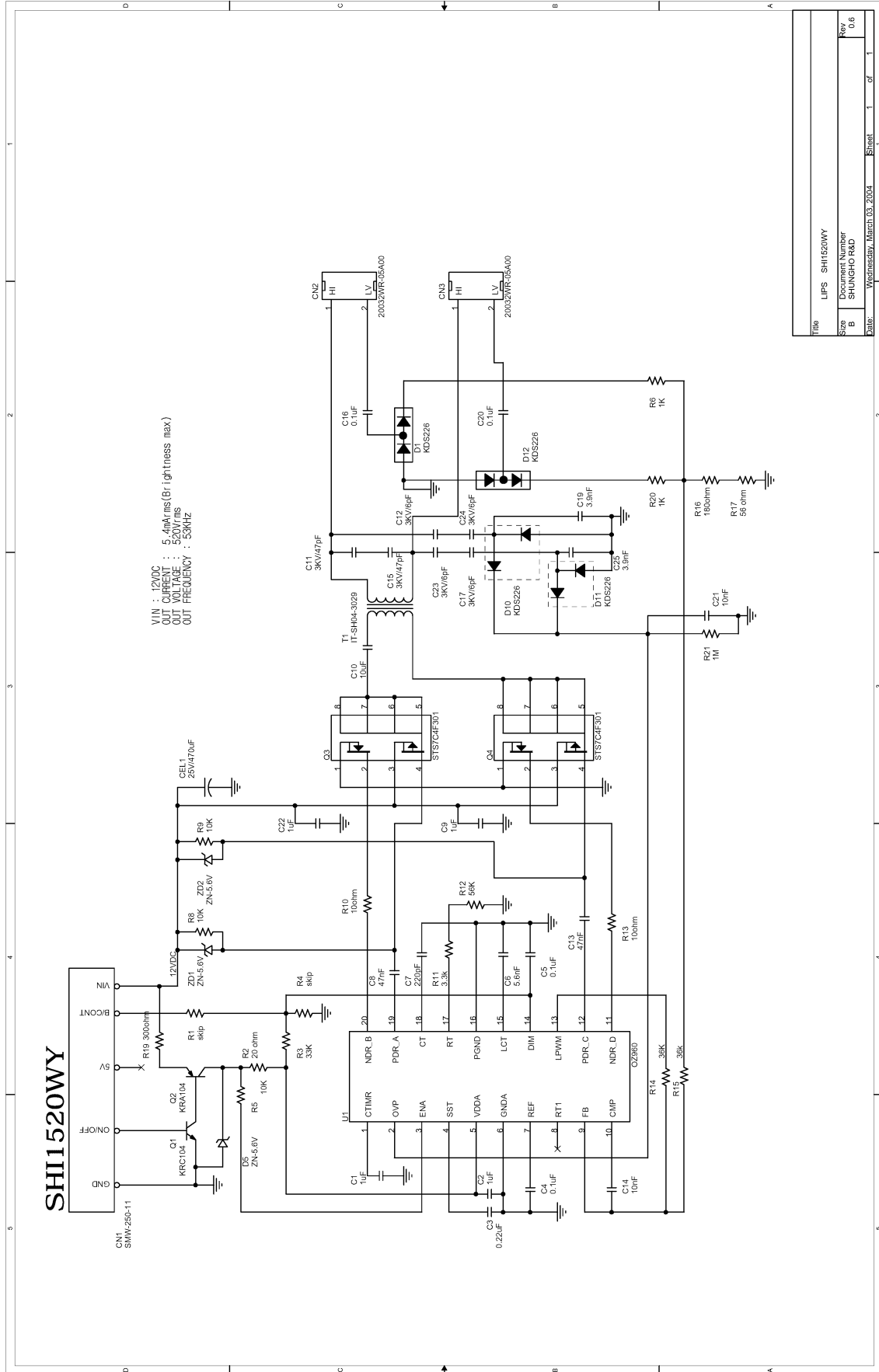
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► Inverter & POWER B/D(SHI1520WY)

- Adapter Cutcuit

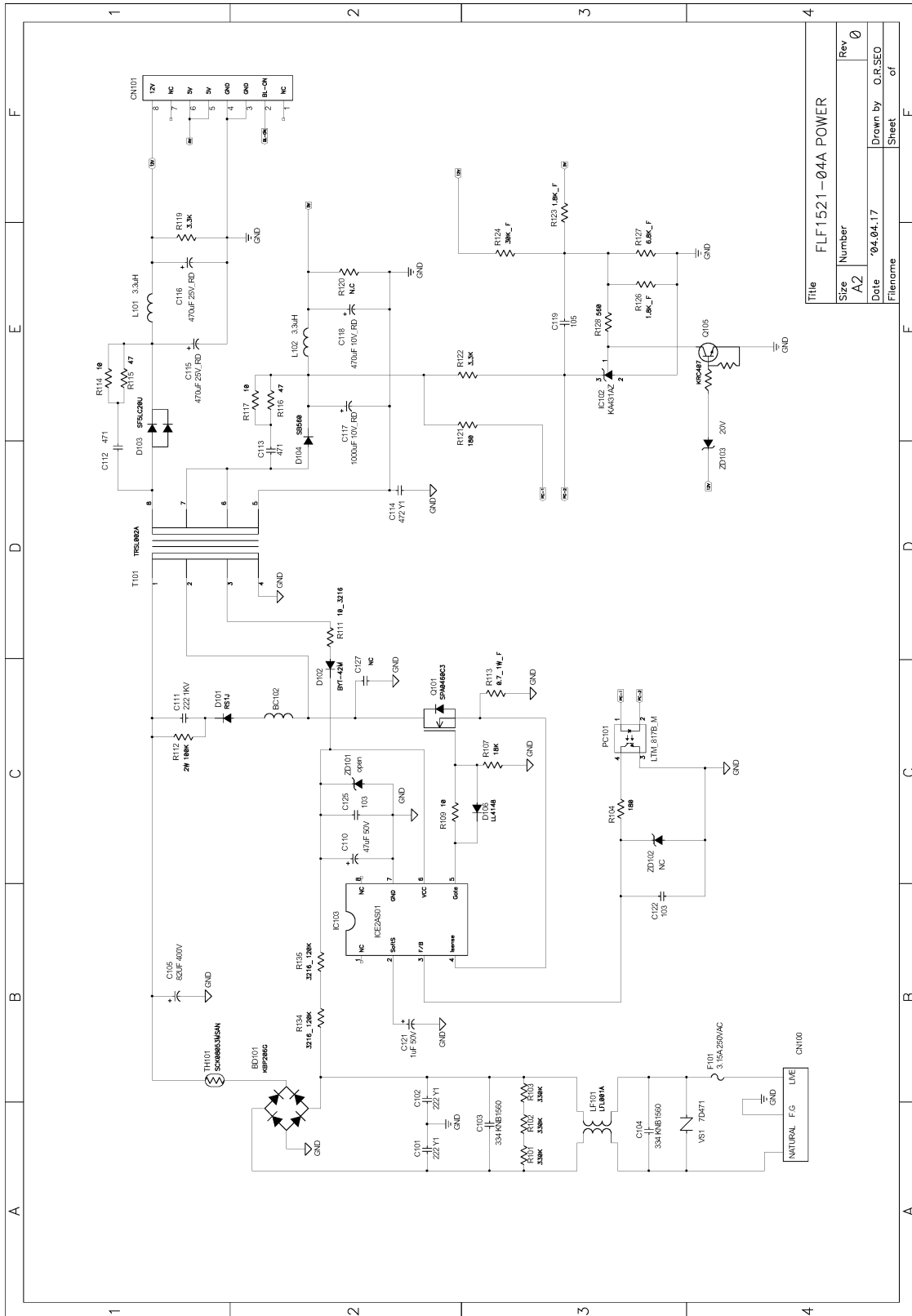


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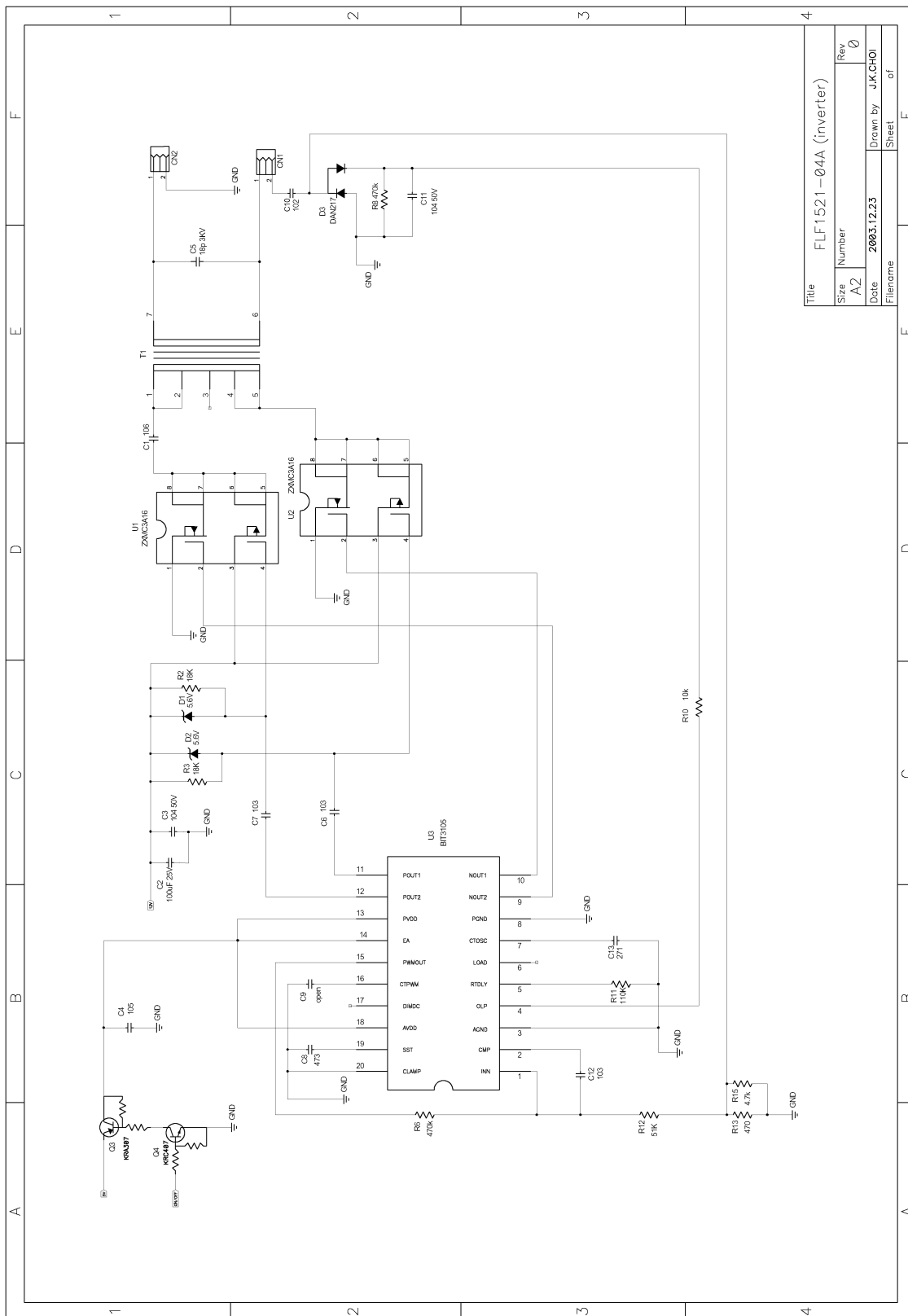
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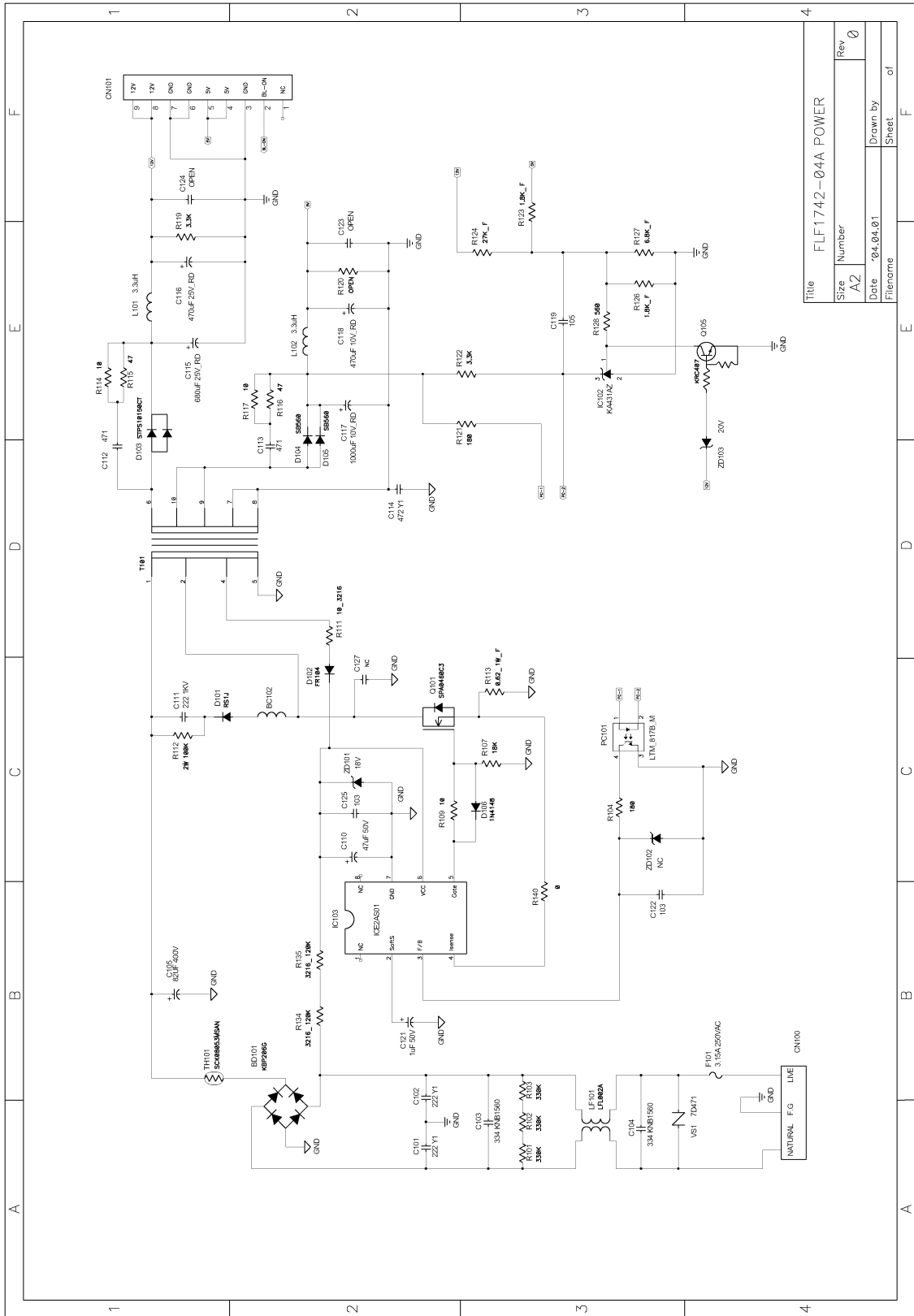
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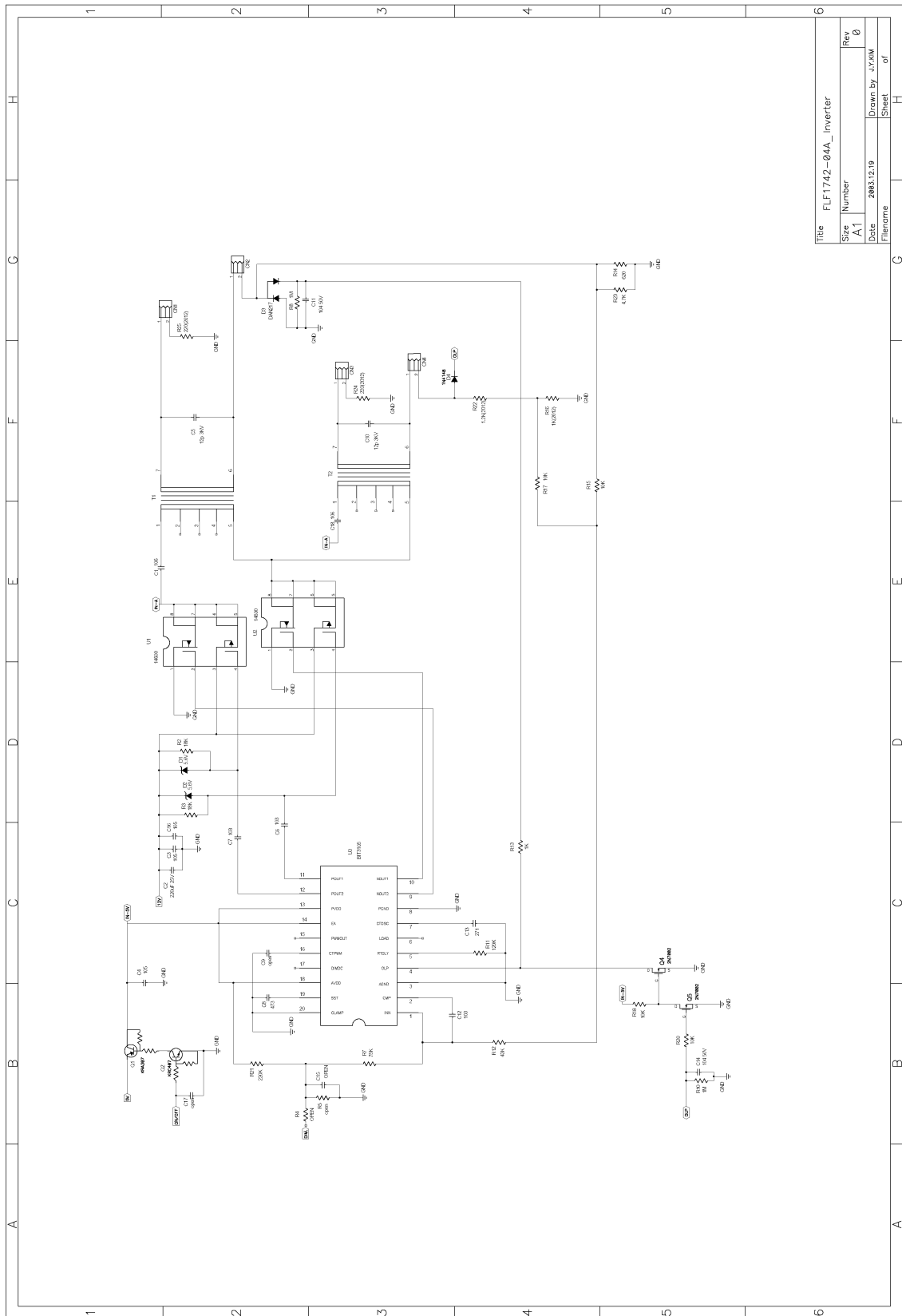
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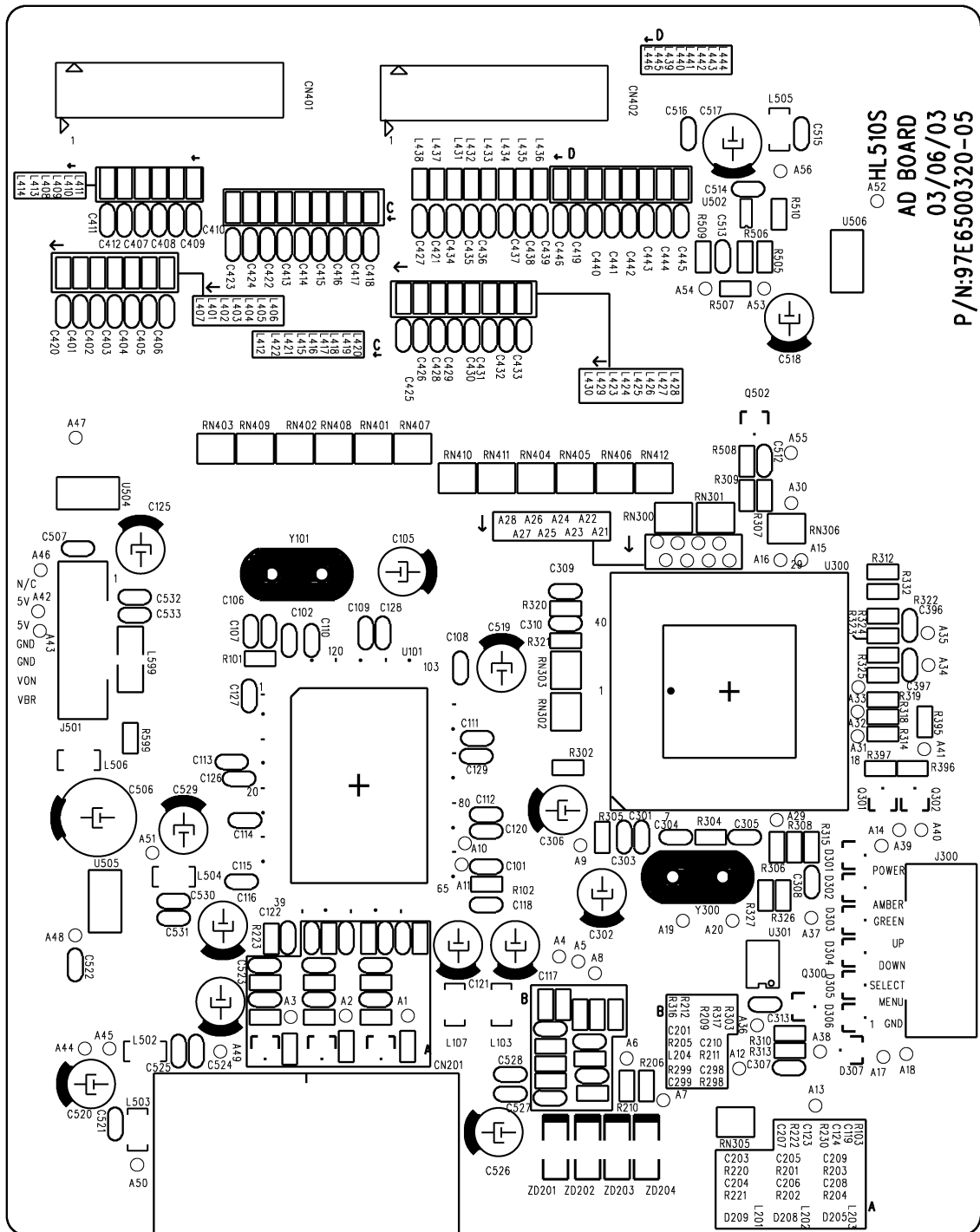
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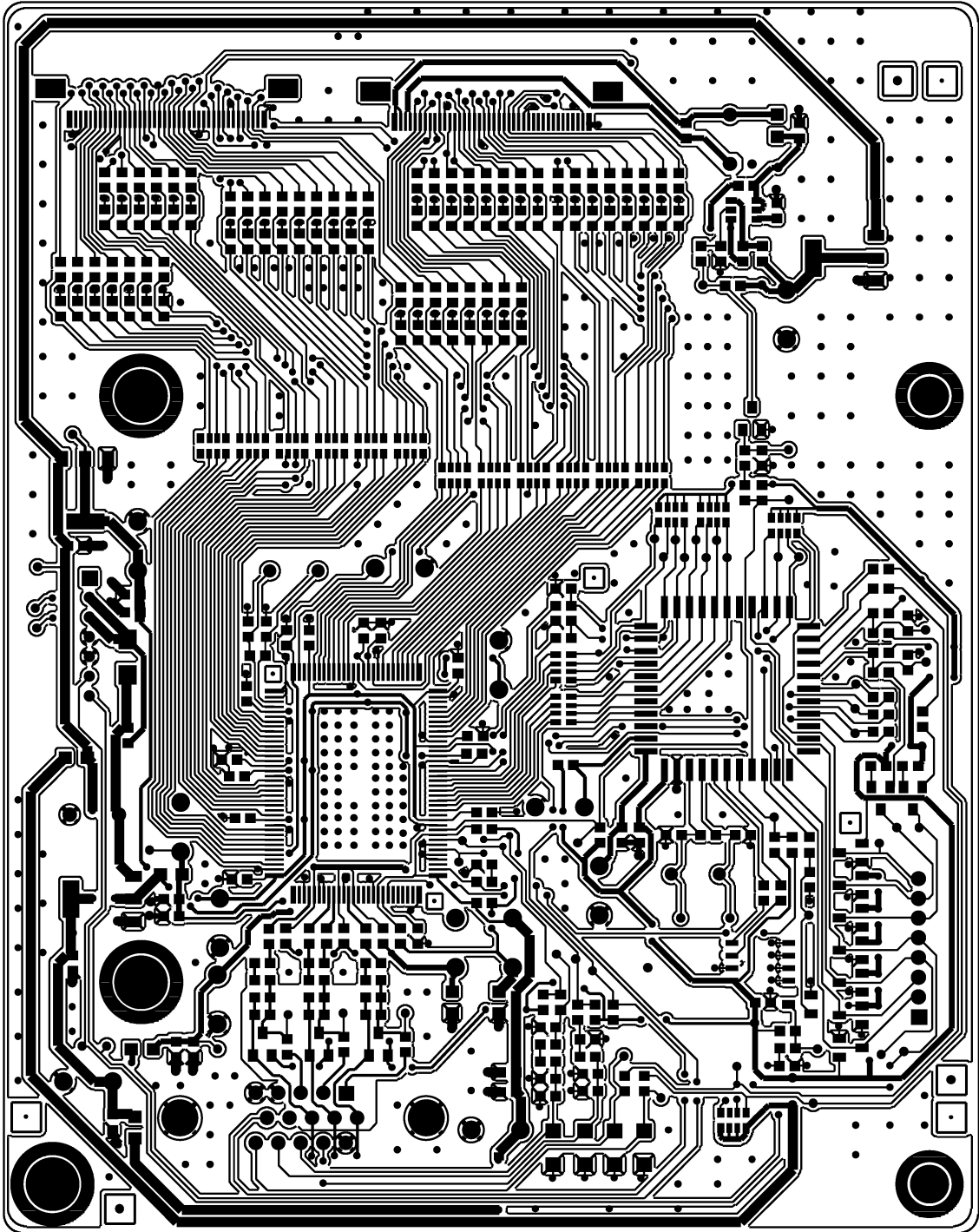
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PCB Layout

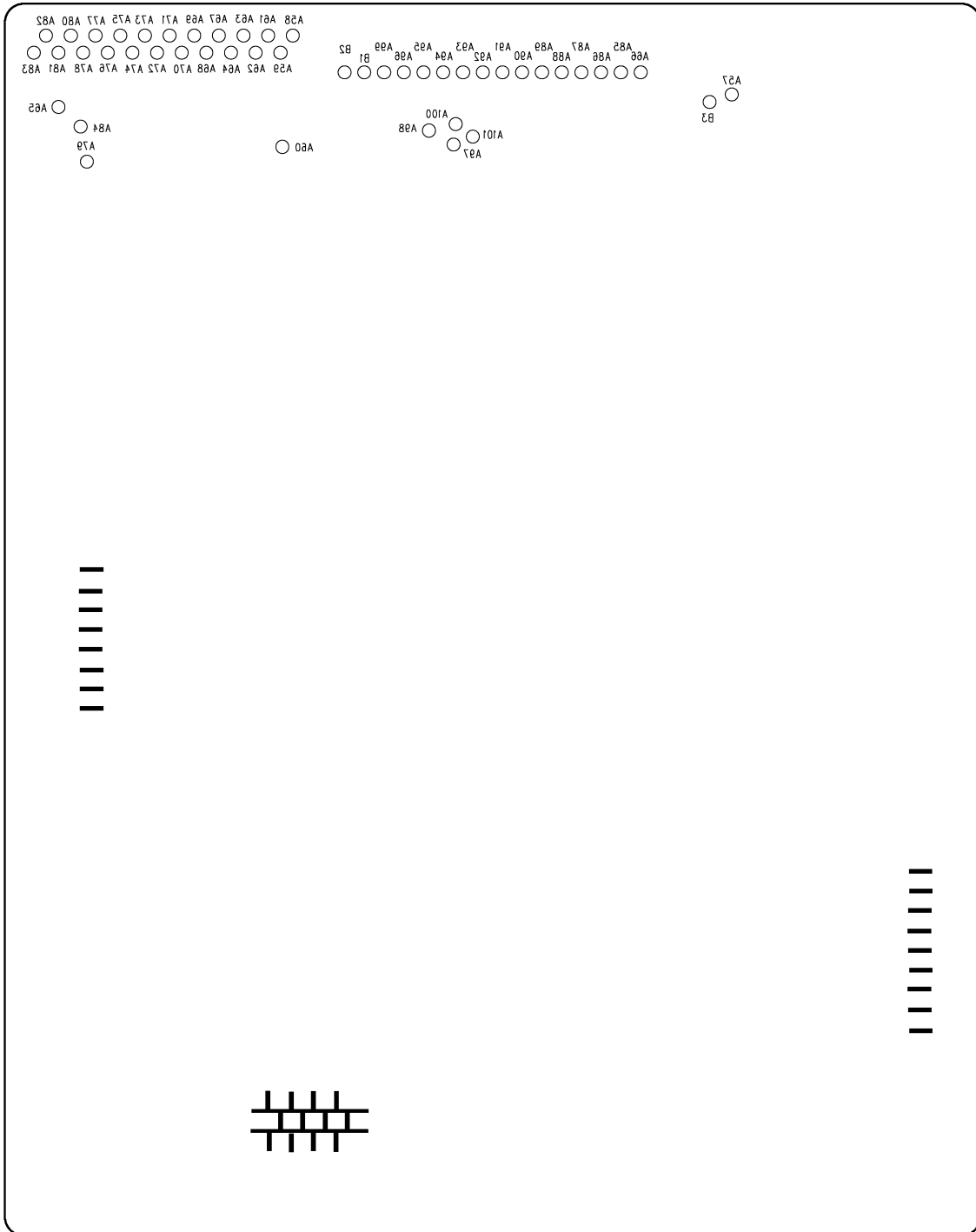
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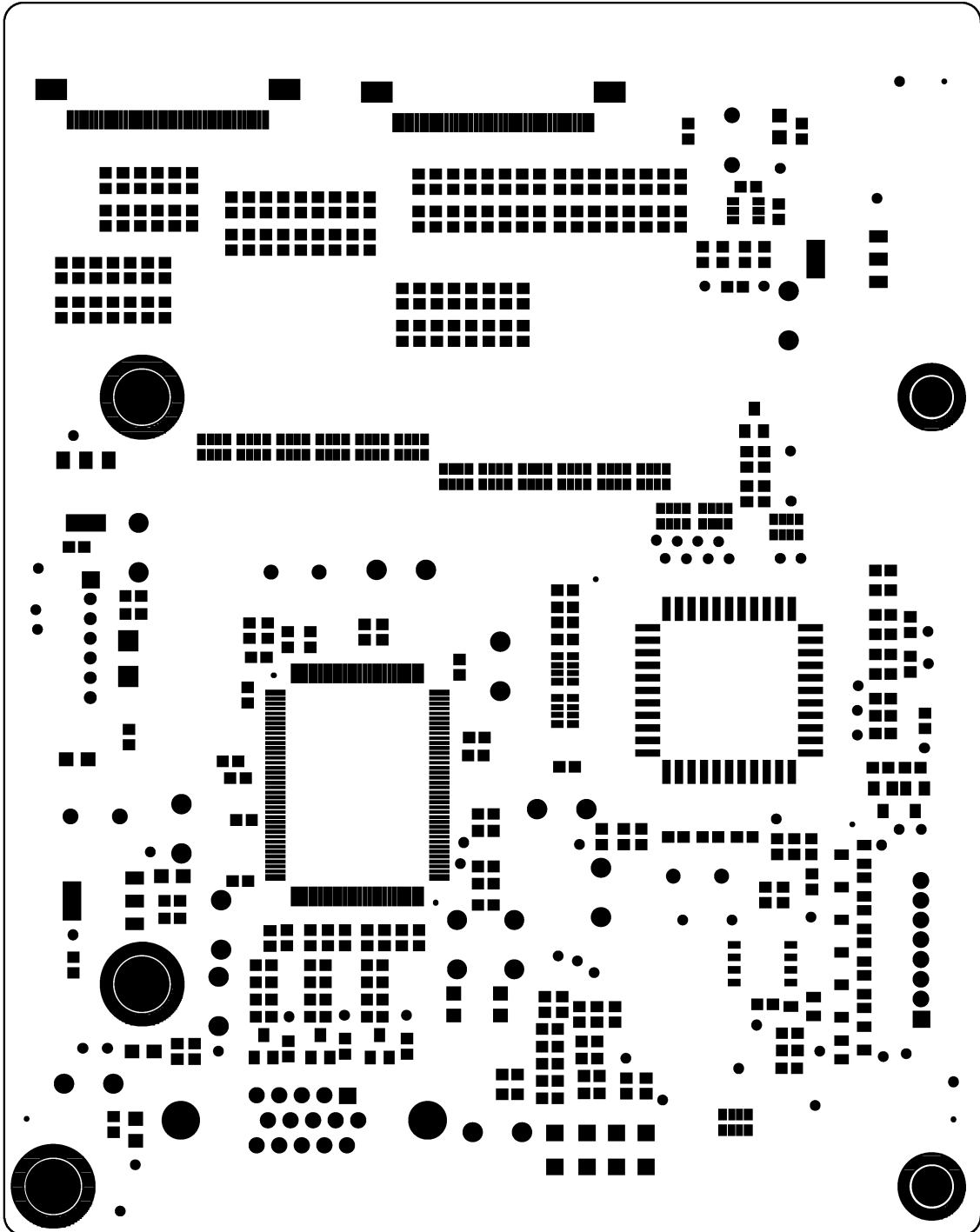
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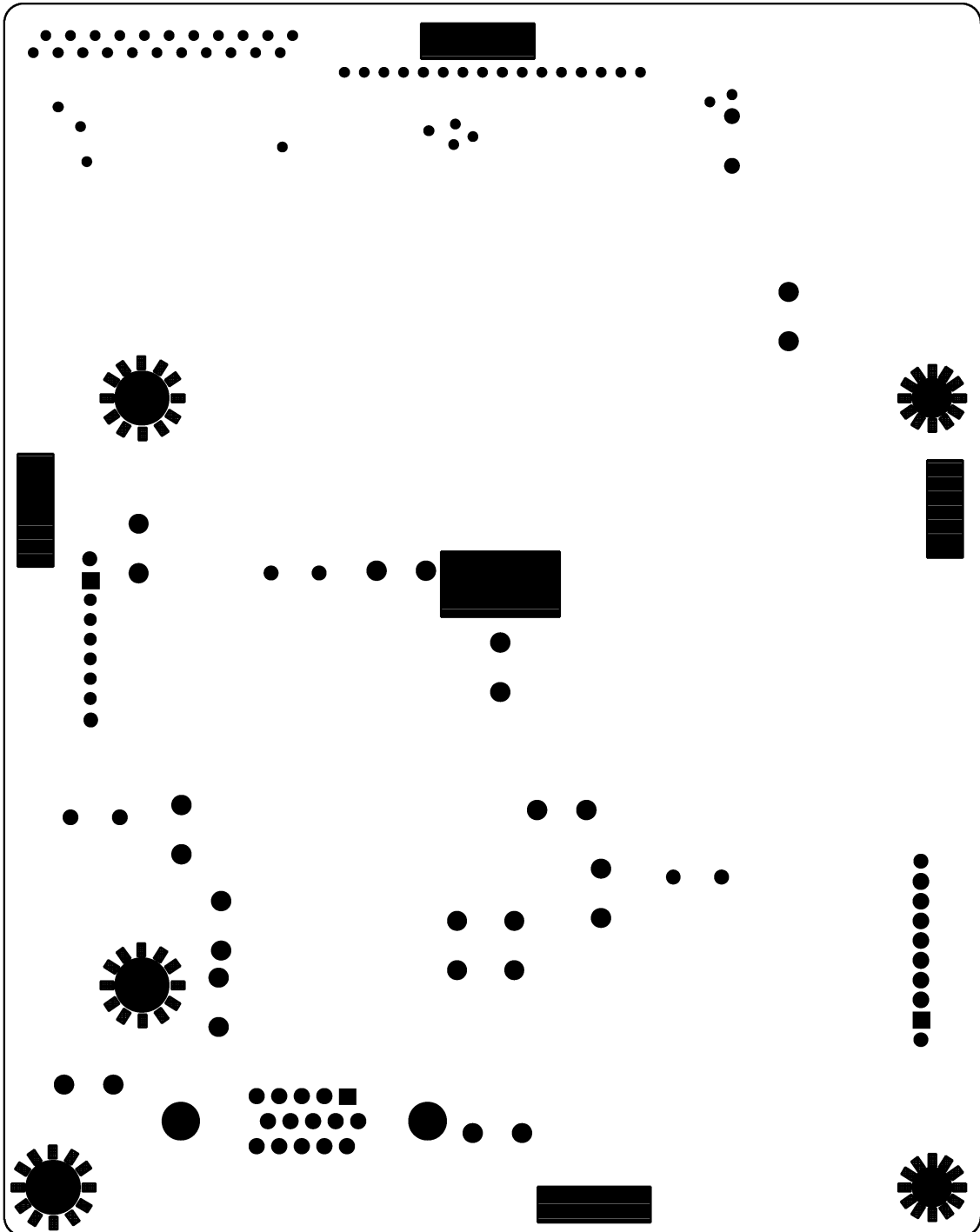
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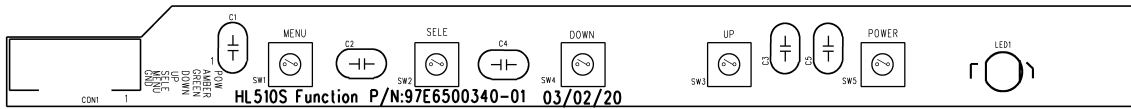
▶ AD B/D MASK TOP (HL510S)



▶ AD B/D MASK BOTTOM (HL510S)



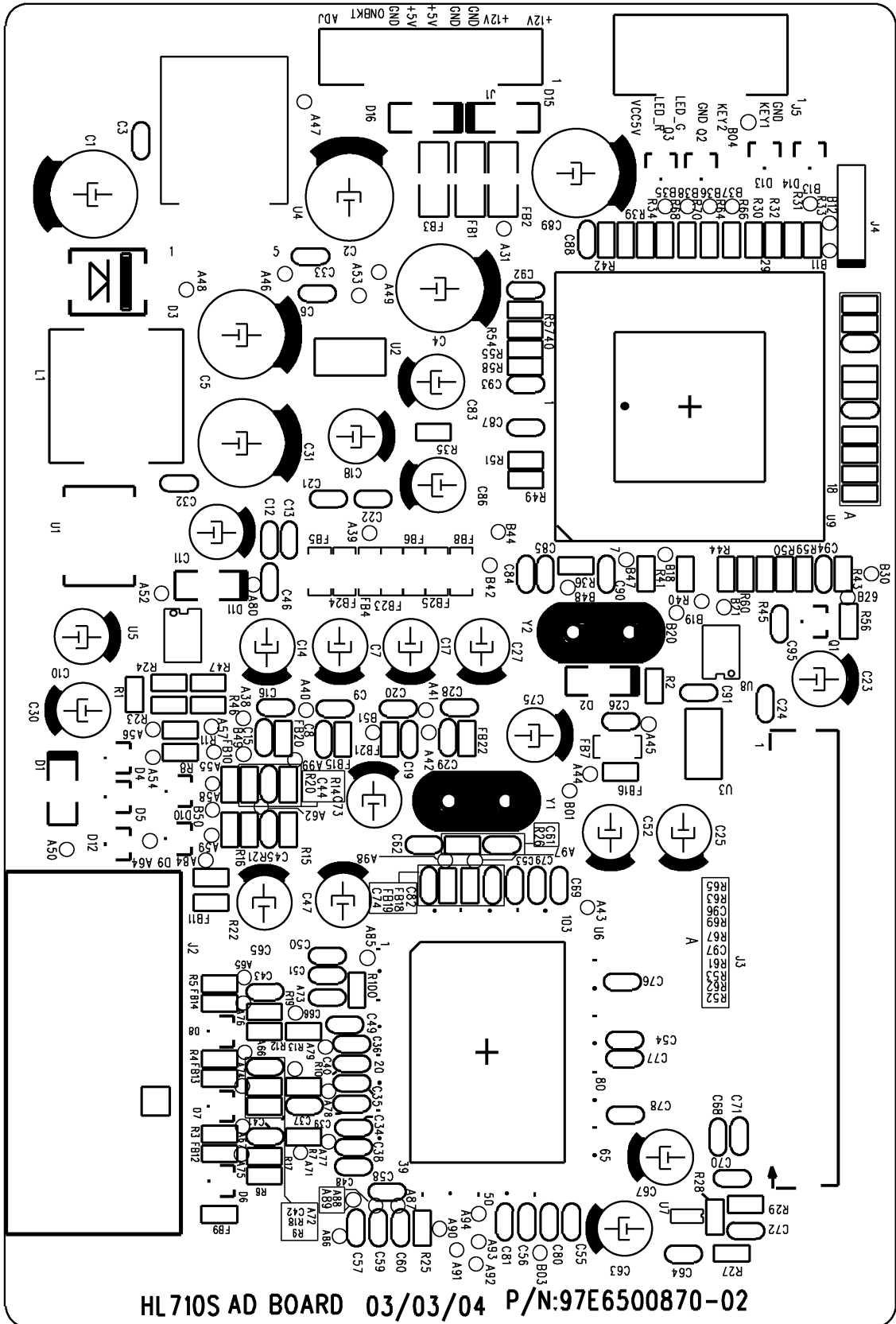
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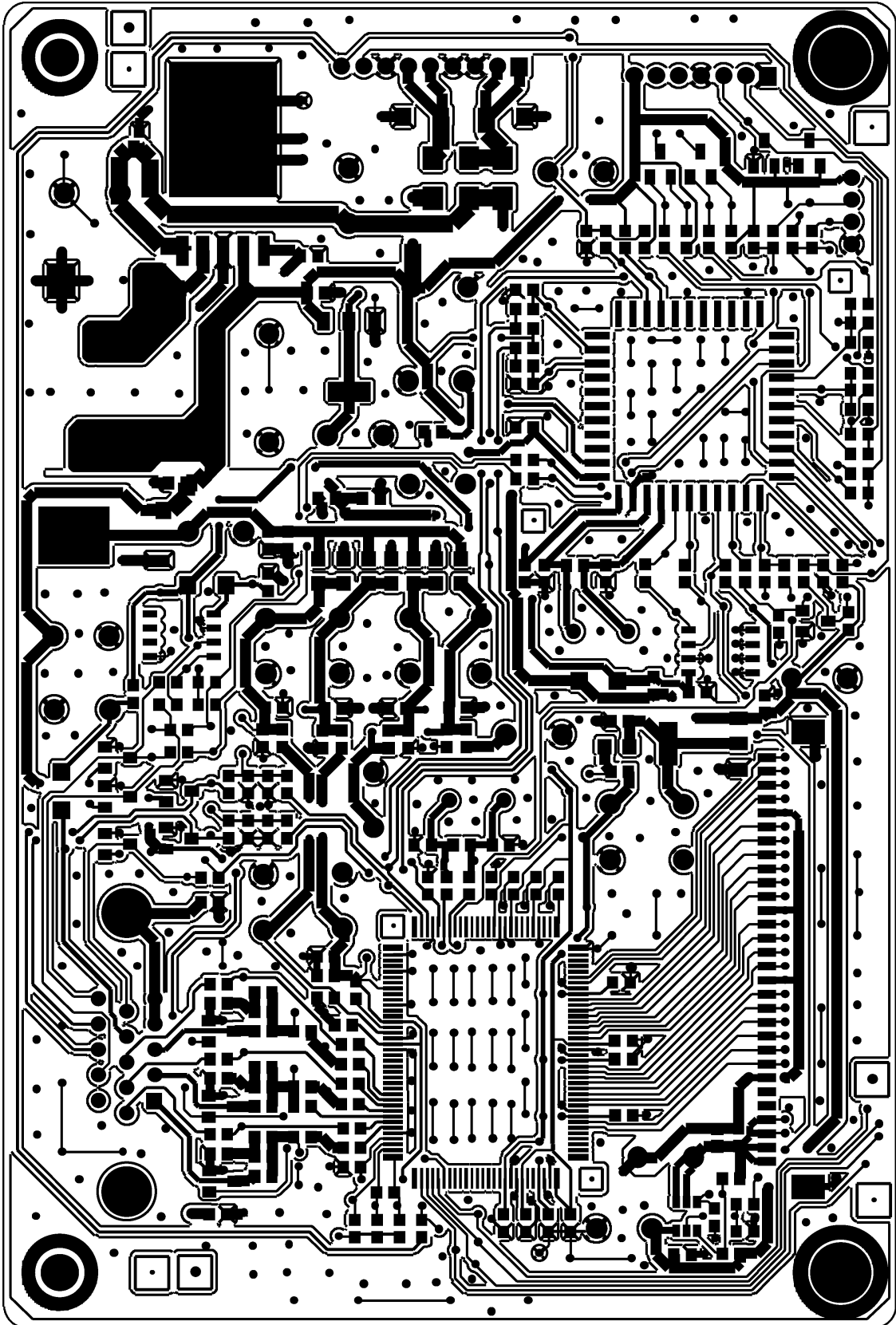
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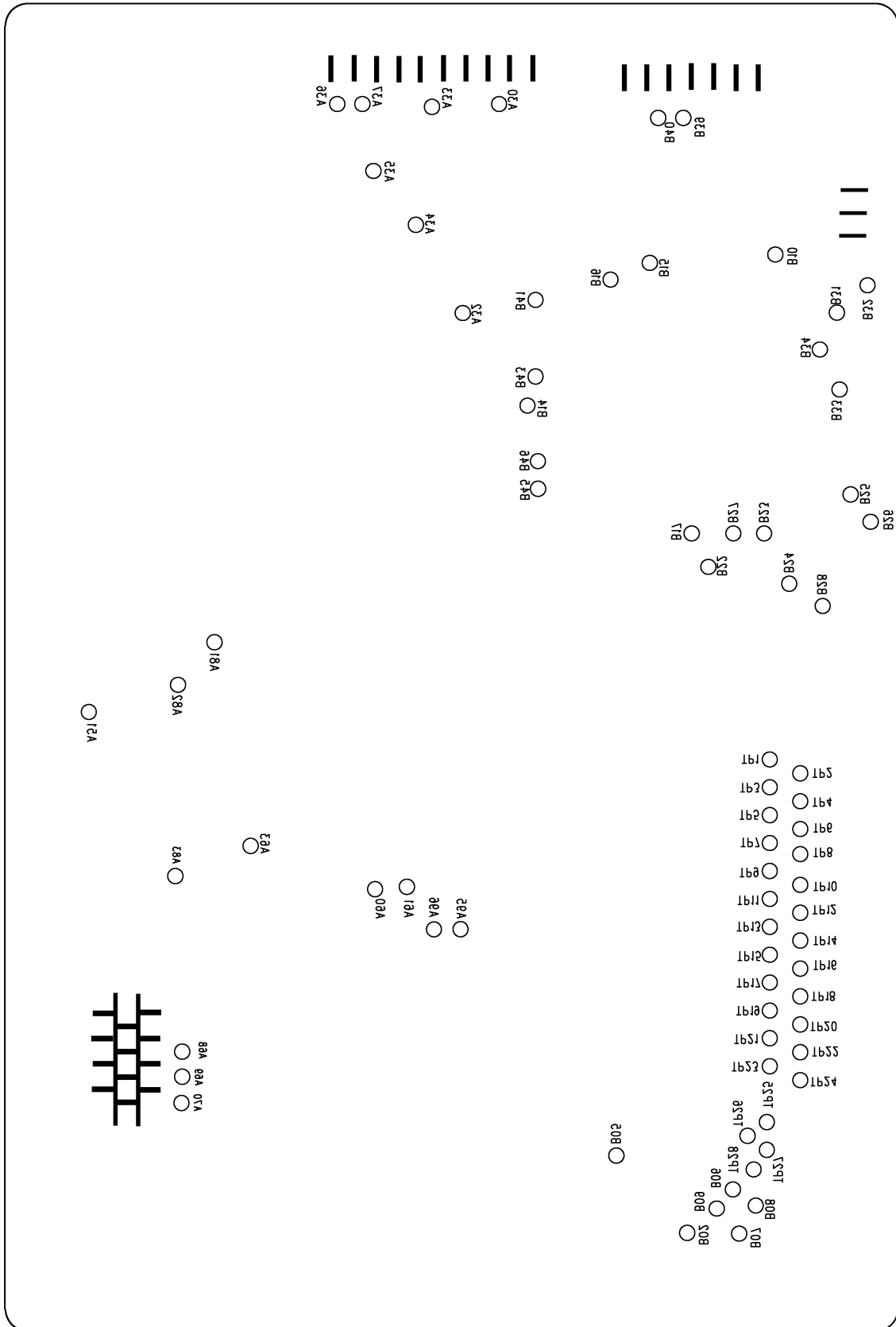
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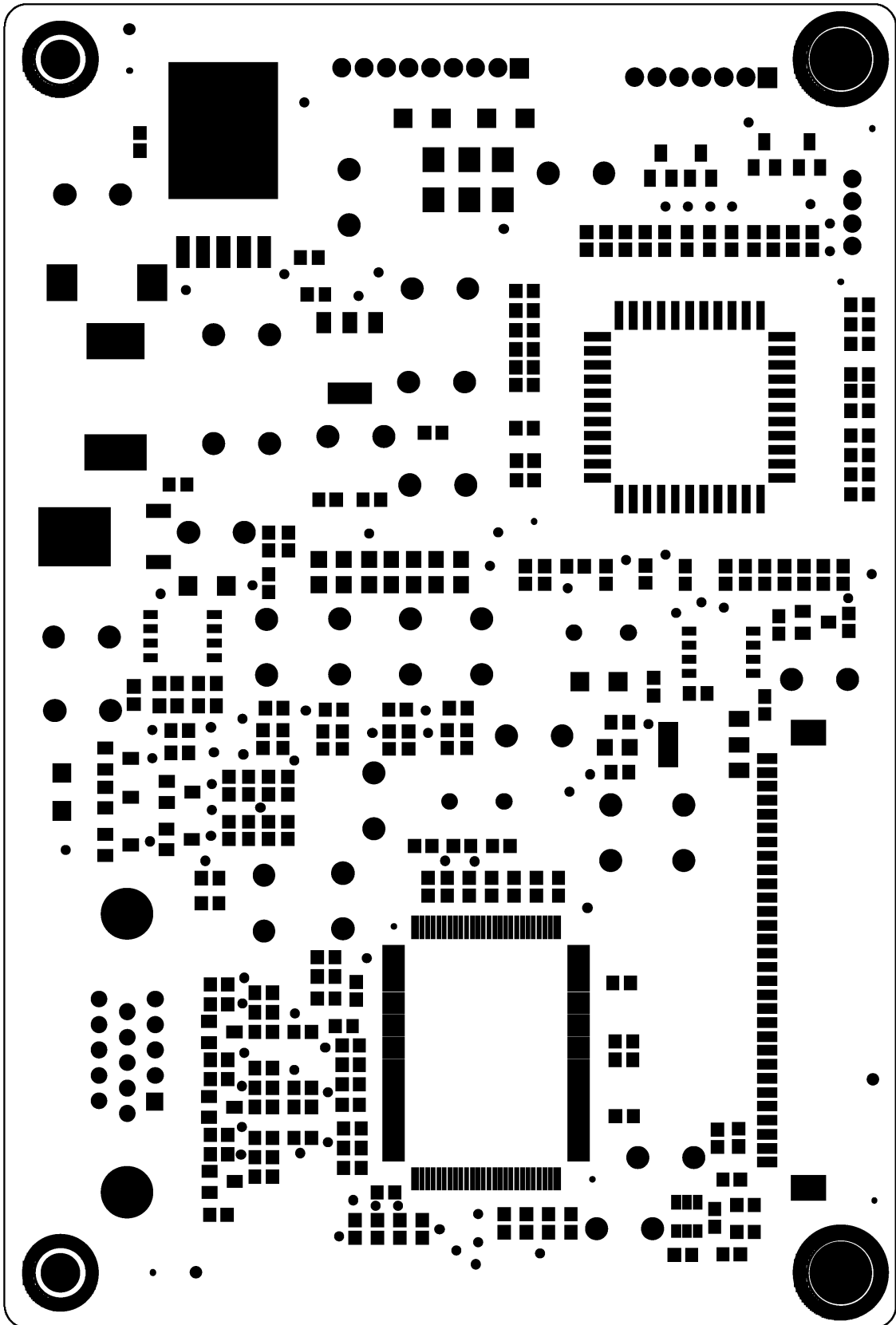
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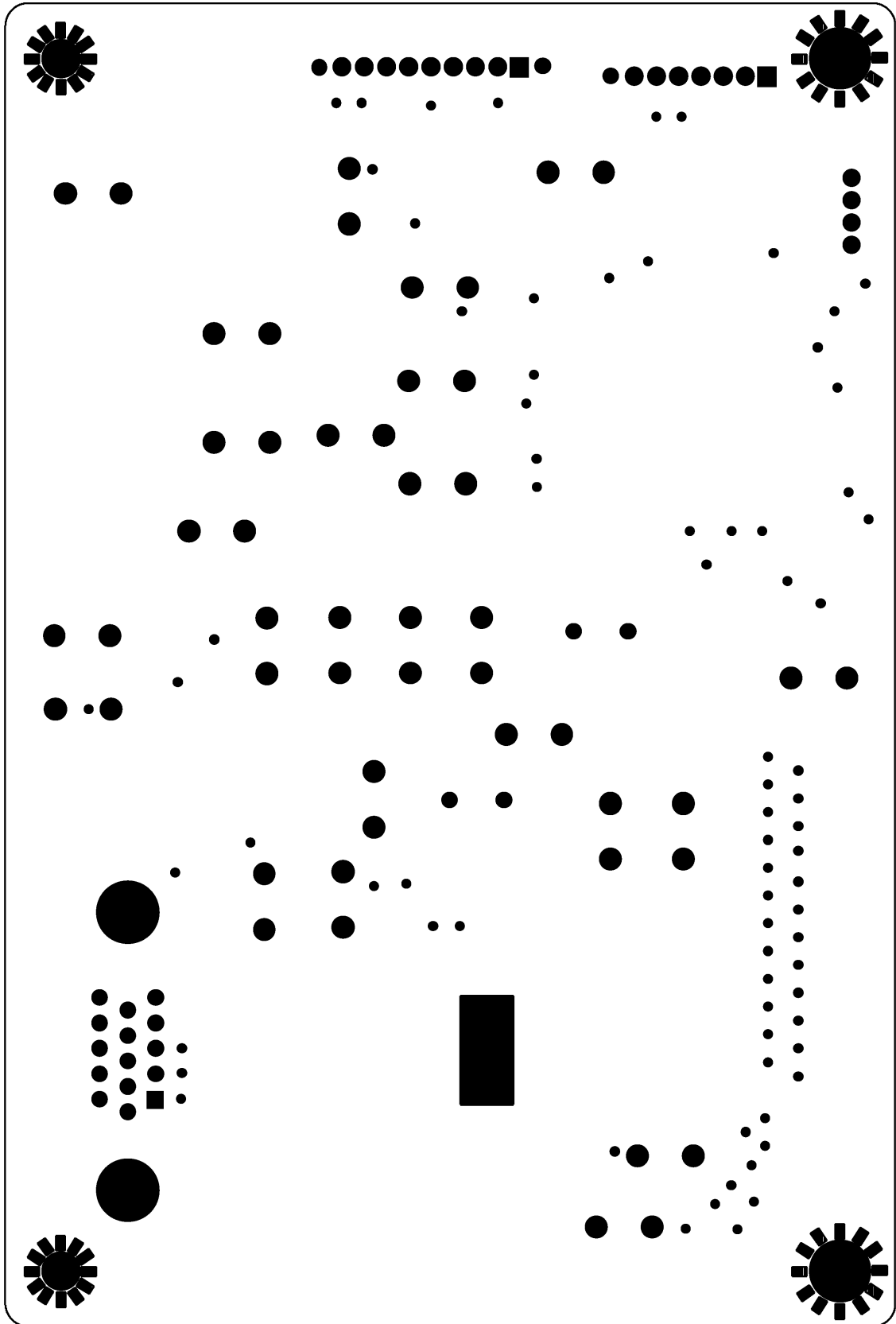
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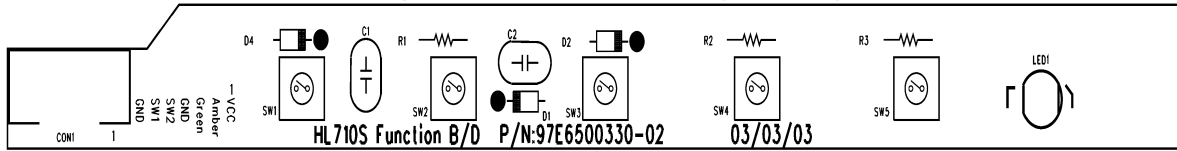
▶ AD B/D MASK TOP (HL710S)



▶ AD B/D MASK BOTTOM (HL710S)



► FUNC B/D TOP SILK (HL710S)



► FUNC B/D BOTTOM PATTERN (HL710S)

