

787LE Service Manual

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1. PRECAUTION AND NOTICES

1.1. SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper use or installation may cause damage to the monitor as well as to the user. Carefully go over the following WARNINGS before installing and keep this guide handy.

WARNINGS:

- ◆ This monitor should be operated only at the correct power sources indicated on the label on the rear end of the monitor. If you're unsure of the power supply in your residence, consult your local dealer or power company.
- ◆ Use only the special power adapter that comes with this monitor for power input.
- ◆ Do not try to repair the monitor your self as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
- ◆ Do not remove the monitor cabinet. There is high-voltage parts inside that may cause electric shock to human bodies, even when the power cord is unplugged.
- ◆ Stop using the monitor if the cabinet is damaged. Have it checked by a service technician.
- ◆ Put your monitor only in a clean, dry environment. If it gets wet, unplug the power cable immediately and consult your service technician.
- ◆ Always unplug the monitor before cleaning it. Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the glass screen.
- ◆ Keep the monitor away from magnetic objects, motors, TV sets, and transformer.
- ◆ Do not place heavy objects on the monitor or power cord.

1.2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltages, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

1.3. SERVICE NOTES

1. When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
2. When replacing a high wattage resistor (more than 1W of metal oxide film resistor) in circuit board, keep the resistor about 5mm away from circuit board.
3. Keep wires away from high voltage, high temperature components and sharp edges.
4. Keep wires in their original position so as to reduce interference.
5. Usage of this product please refer to also user's manual.

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2. SERVICE TOOL & EQUIPMENT REQUIRED

1. SIGNAL GEN.
2. MULTIMETER
3. OSCILLOSCOPE
4. SCREW DRIVER
5. IRON
6. ABSORBER
7. SOLDER
8. DUMMY LOAD (5ohm/200W)

3. SPECIFICATIONS

3.1. PRODUCT SPECIFICATIONS

LCD Panel	17.0" TFT
Power Management	Energy Star compliant VESA DPMS compatible < 2W
Displayable Resolution	SXGA 1280× 1024 (max.)
Pixel Dimension	0.264(H)× 0.264(V)mm
LCD Display Color	16.2M Color Max. (6bit+2FRC)
Viewing Angle	CR 10 Horizontal: -70°+70° Vertical: -65°+65°
Tilt	+90°, -5°
Contrast Ratio	400 : 1 (typ.)
Brightness	200 cd/ m ² (min.) 260 cd/m ² (typ.)
Response Time	Tr: 9 ms Tf: 16ms
Active Display Area	339.5mm(H)× 272mm(V)
Temperature	Operating: 0° C ~ +40° C Storage: -20° C ~ +60° C
Compliance	UL 1950, C-UL, EN60950, FCC-B, CE MARK, TÜV/GS, TCO99, CB.
Power	Input Voltage: 100~240 Vac Consumption: 45 Watts (Max.)

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3.2. FACTORY SUPPORTING MODES

There are totally 35 timings mode that can be saved in memory by FIFO architecture.

This monitor can support VGA up to SXGA resolution.

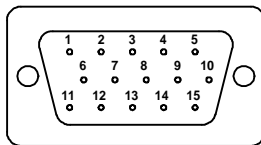
There are some resolution example listed in lookup timing table.

Lookup timing table:

- 1.VGA 720× 400 (70Hz) mode
- 2.VGA 640× 480 (60Hz) mode
- 3.VESA 640× 480 (72Hz) mode
- 4.VESA 640× 480 (75Hz) mode
- 5.VESA 800× 600 (56Hz) mode
- 6.VESA 800× 600 (60Hz) mode
- 7.VESA 800× 600 (72Hz) mode
- 8.VESA 800× 600 (75Hz) mode
- 9.VESA 1024× 768 (60Hz) mode
- 10.VESA 1024× 768 (70Hz) mode
- 11.VESA 1024× 768 (75Hz) mode
- 12.VESA 1280× 1024 (60Hz) mode
- 13.VESA 1280× 1024 (75Hz) mode
- 14.VESA 1152× 864 (75Hz) mode
- 15.MAC 640× 480 (67Hz) mode
- 16.MAC 832× 624 (74.5Hz) mode
- 17.MAC 1152× 870 (75Hz) mode

3.3. D-SUB CONNECTOR

D-SUB 15 PIN CONNECTOR

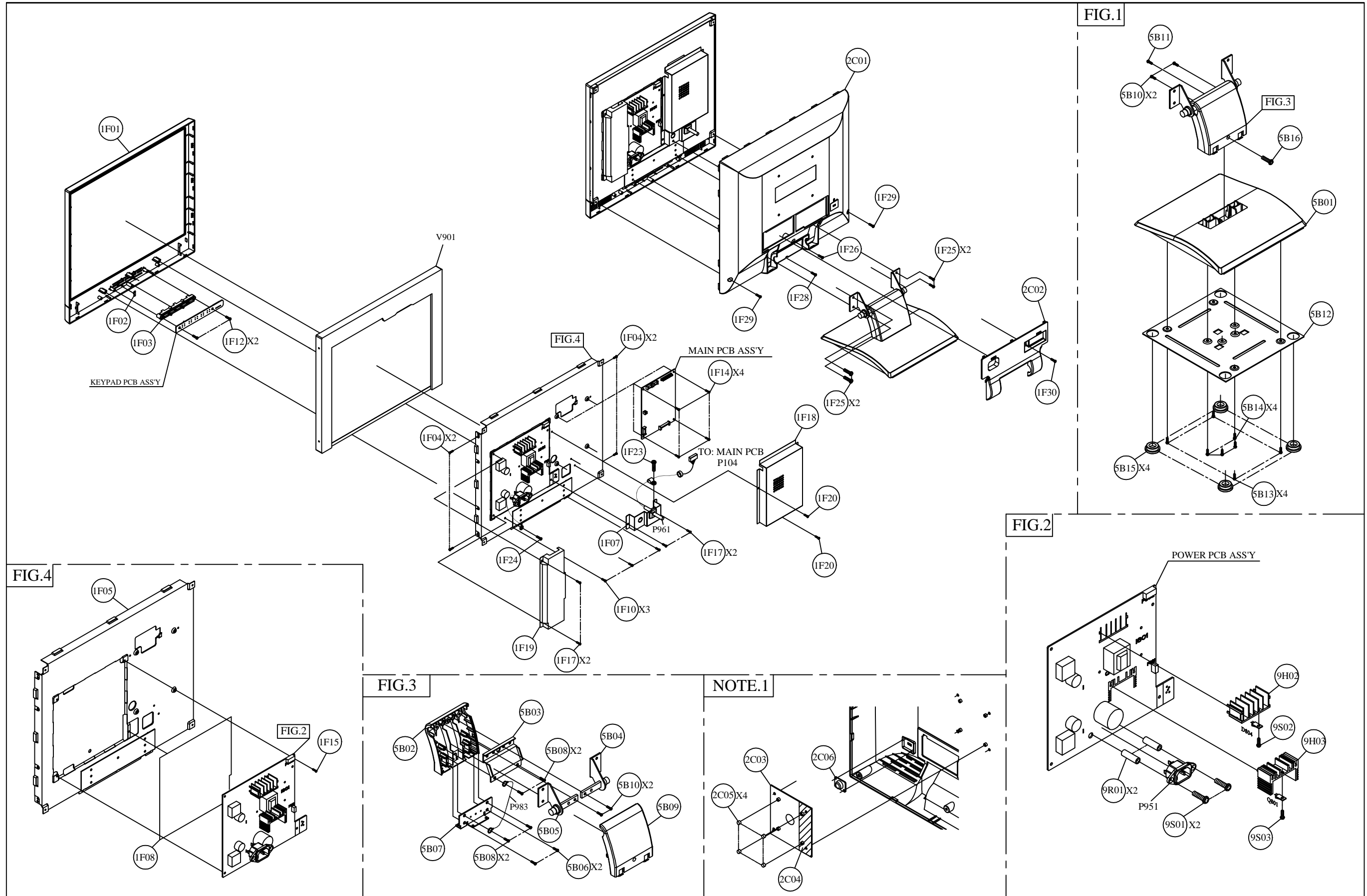


1.R	6.GND	11.GND
2.G	7.GND	12.SDA
3.B	8.GND	13.H.SYNC
4.GND	9. +5V	14.V.SYNC
5.GND	10.GND	15.SCL

SIGNAL LEVEL

CONNECTOR	SIGNAL	DESCRIPTION
R	RED	0.7vp-p(VIDEO)
G	GREEN	0.7vp-p(VIDEO)
B	BLUE	0.7vp-p(VIDEO)
H	H/SYNC	TTL positive or negative
V	V/SYNC	TTL positive or negative
SDA	DDC1/2B	TTL
SCL	DDC1/2B	TTL

4.1. Exploded View



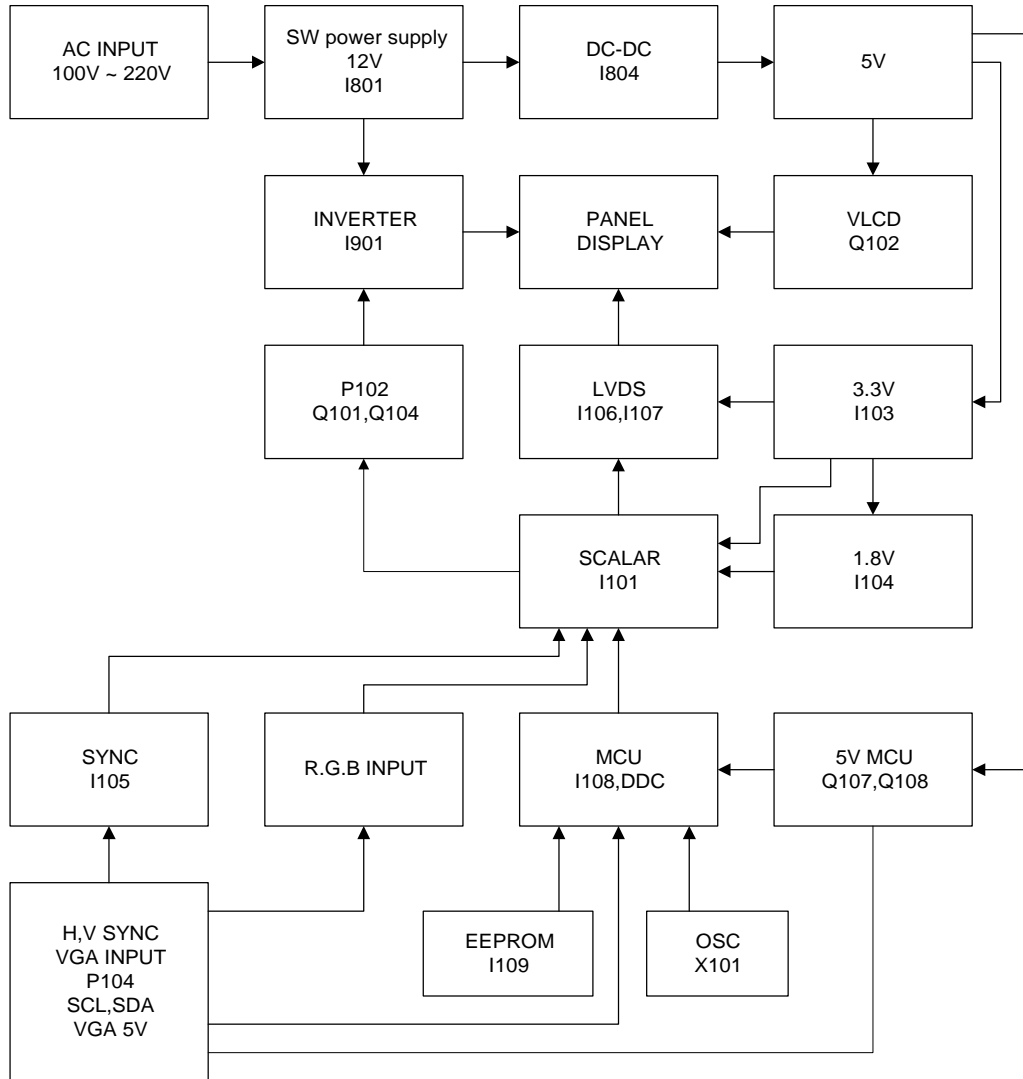
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4.2. EXPLODED VIEW PARTS LIST

Ref. No.	Source	Part No.	DESCRIPTION	SPECIFICATION	Q' TY	REMARK
1F01		2024262953	FRONT BEZEL	LG ABS+PC PS-7604B MT11010	1	
1F02		2053753001	LED INDIC.-PWR	JT178L/LEP PMMA 94HB	1	
1F03		2044262202	FUNCTION KEY	JT178L ABS 94V0 PS-7604B	1	
1F04		2082730062	SCREW,BND+	M3X6(BND+)	4	
1F05		2071966800	METAL FITTG	JT178L/SECC 0.8MM PANEL-178K77	1	
1F07		2071966200	METAL FITTG	JT178K77 SECC T=1.0MM(I/O)	1	
1F08		2072454600	INSULATOR	MYLAR(168*168T=0.5)MM(94V0)	1	
1F10		2084740102	SCREW,BND T+	M4X10(BND T+)	3	
1F12		2084730082	SCREW,BND T+	M3X8(BND T+)	2	
1F14		2082630062	SCREW	M3X6 P=0.5	4	
1F15		2082630062	SCREW	M3X6 P=0.5	1	
1F17		2082630062	SCREW	M3X6 P=0.5	4	
1F18		2071666100	SHIELD PLATE	JT178K77 SPTE T=0.3MM(MAIN)	1	
1F19		2071667500	SHIELD PLATE	JT178L/SPTE T:0.3MM(INVERTER)	1	
1F20		2082630062	SCREW	M3X6 P=0.5	2	
1F23		2081430082	SCREW,(WASH)	M3X8 P=0.5(TOOTH,WASHER)	1	
1F24		2085740062	SCREW,B OTW+	B,OTW+,M4x6	1	
1F25		2087340086	SCREW,B SPW+	M4X8 B SPW+ ø3.96 NYLON	4	
1F26		2082740082	SCREW,BND+	M4X8(BND+)	1	
1F28		2084740102	SCREW,BND T+	M4X10(BND T+)	1	
1F29		2082630064	SCREW	M3X6 P=0.6 BLACK	2	
1F30		2082630064	SCREW	M3X6 P=0.6 BLACK	1	
2C01		2022259707	CABI BACK	787LE/ABS+PC BACK C LG LOGO	1	
2C02		2027257503	DUST COVER	JT178L/ABS+PC BLACK C	1	
2C03		2071863900	BRACKET,FIX	JT178L/SECC 1.0T KEWSINGTON	1	
2C04		2072457100	INSULATOR	PC BLACK 94V0 T=0.5	1	
2C05		2072455300	INSULATOR	SILICON RUBBER ø6.5Xø9.0	4	
2C06		2071958300	METAL FITTG	VE170 KENSINGTON	1	
5B01		2028255202	STAND	JT178L ABS 94HB BLACK C	1	
5B02		2027255802	DUST COVER	JT178L ABS 94HB BLACK C	1	
5B03		2071962700	METAL FITTG	JT178L SECC 1.5T HINGE(UP)	1	
5B04		2106655100	HINGE	JT178L(L) 0-90'	1	
5B05		2106655200	HINGE	JT178L(R) 0-90'	1	
5B06		2084740082	SCREW,BND T+	M4X8(BND T+)	2	
5B07		2071962800	METAL FITTG	JT178L SECC 1.5T HINGE (DOWN)	1	
5B08		2084740082	SCREW,BND T+	M4X8(BND T+)	4	
5B09		2027255902	DUST COVER	JT178L/ABS 94HB BLACK C	1	
5B10		2085740122	SCREW,B OTW+	SCREW B OTW+ M4X12	4	
5B11		2084740102	SCREW,BND T+	M4X10(BND T+)	1	
5B12		2071966700	METAL FITTG	JT178L SECC 1.5T (STAND)	1	
5B13		2084740082	SCREW,BND T+	M4X8(BND T+)	4	
5B14		2082740122	SCREW,BND+	M4X12 (BND+)	4	
5B15		2039802303	FOOT PAD	VA520 CR420xø16.5x5.8 BLACK	4	
5B16		2082630062	SCREW	M3X6 P=0.5	1	
9H02		2072259700	HEAT SINK	JT178K77 44WX27LX20H	1	
9H03		2072259600	HEAT SINK	JT178K77 45WX20LX20H	1	
9R01		2063252000	SPACER SUPPORT	NYLON 66 94V2 15.87*06.6*42.5	2	
9S01		2083730102	SCREW,BND T+	SCREW BND T+	2	
9S02		2084730082	SCREW,BND T+	M3X8(BND T+)	1	
9S03		2084730082	SCREW,BND T+	M3X8(BND T+)	1	

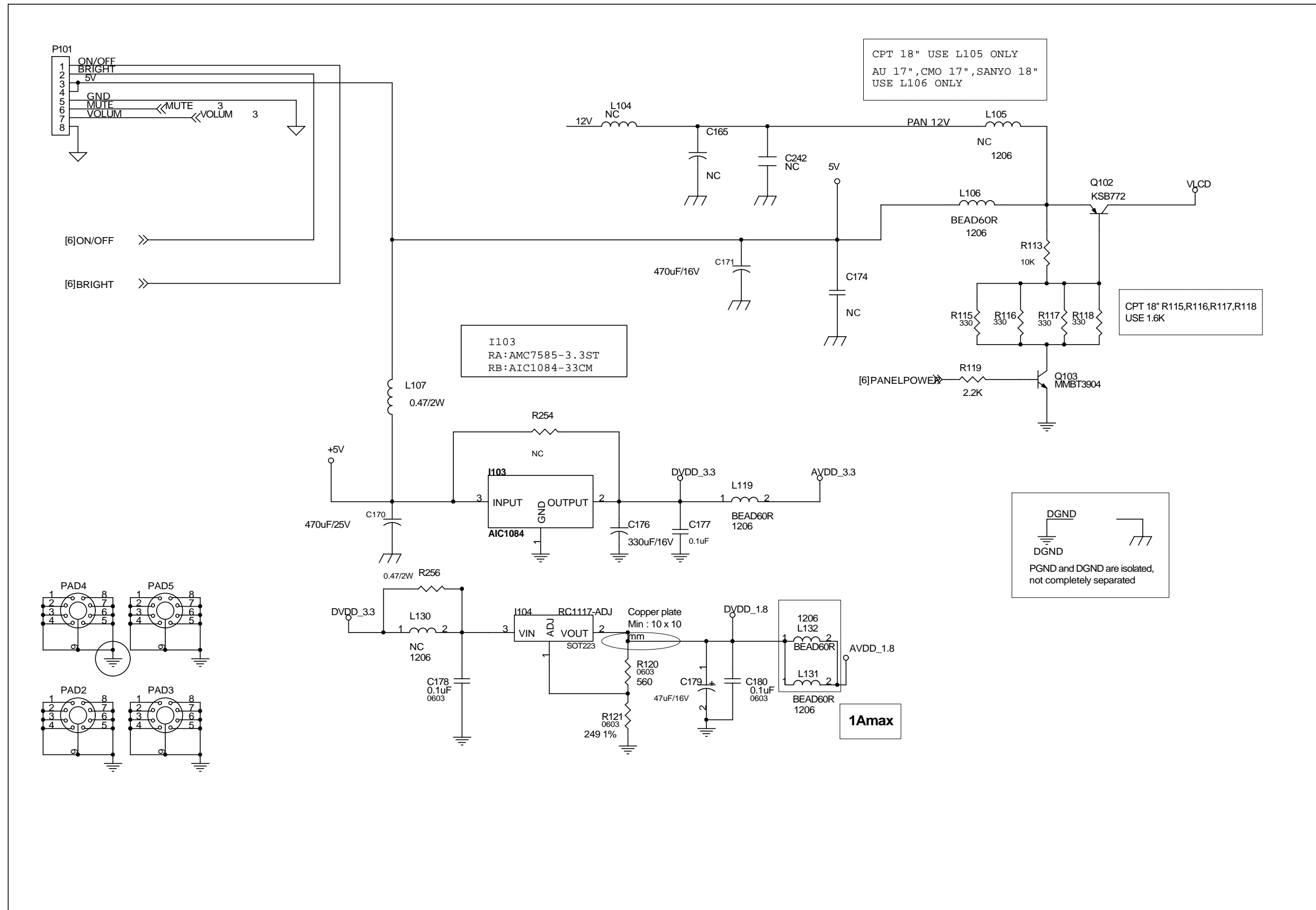
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5. BLOCK DIAGRAM

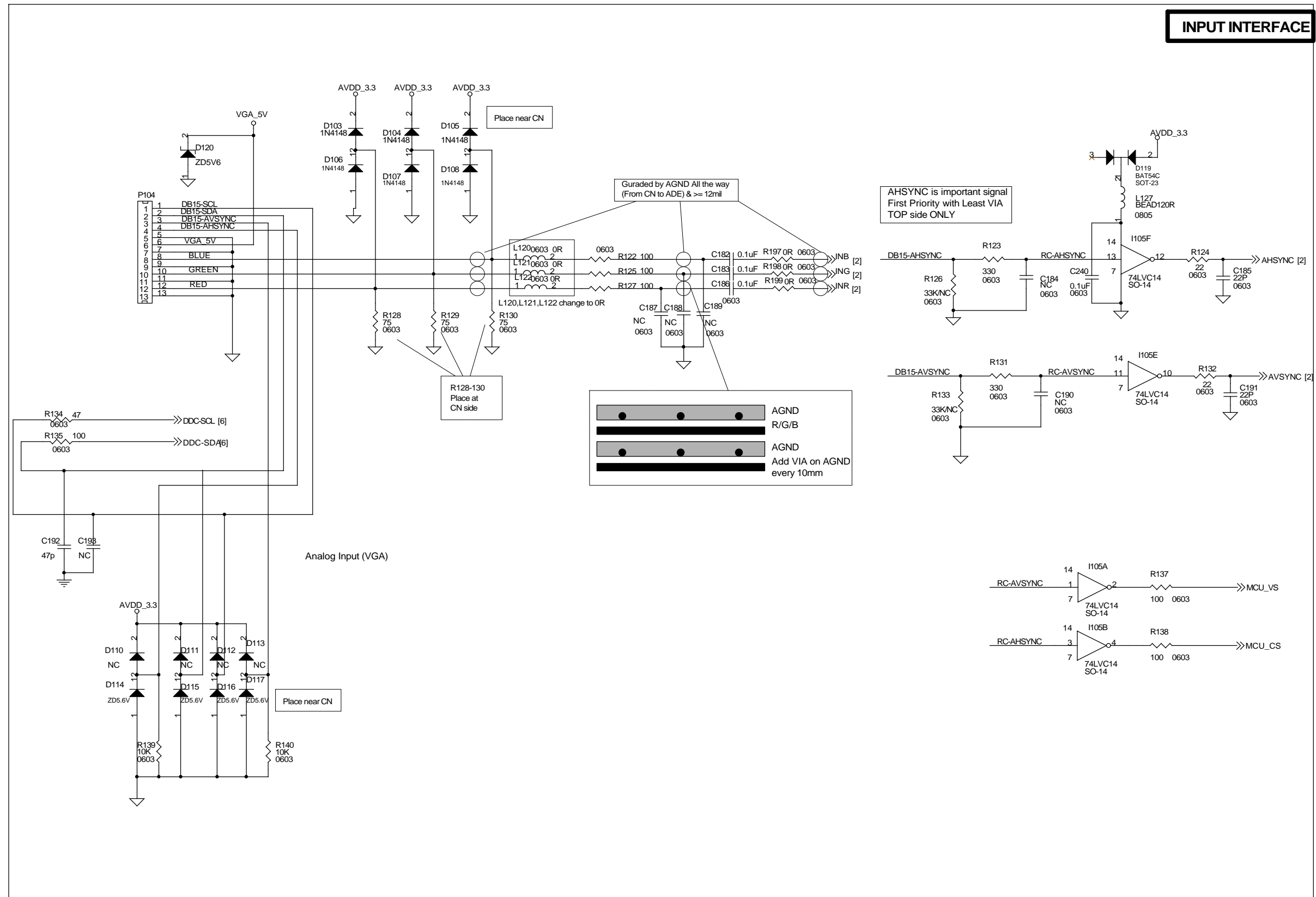


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6.2. Power



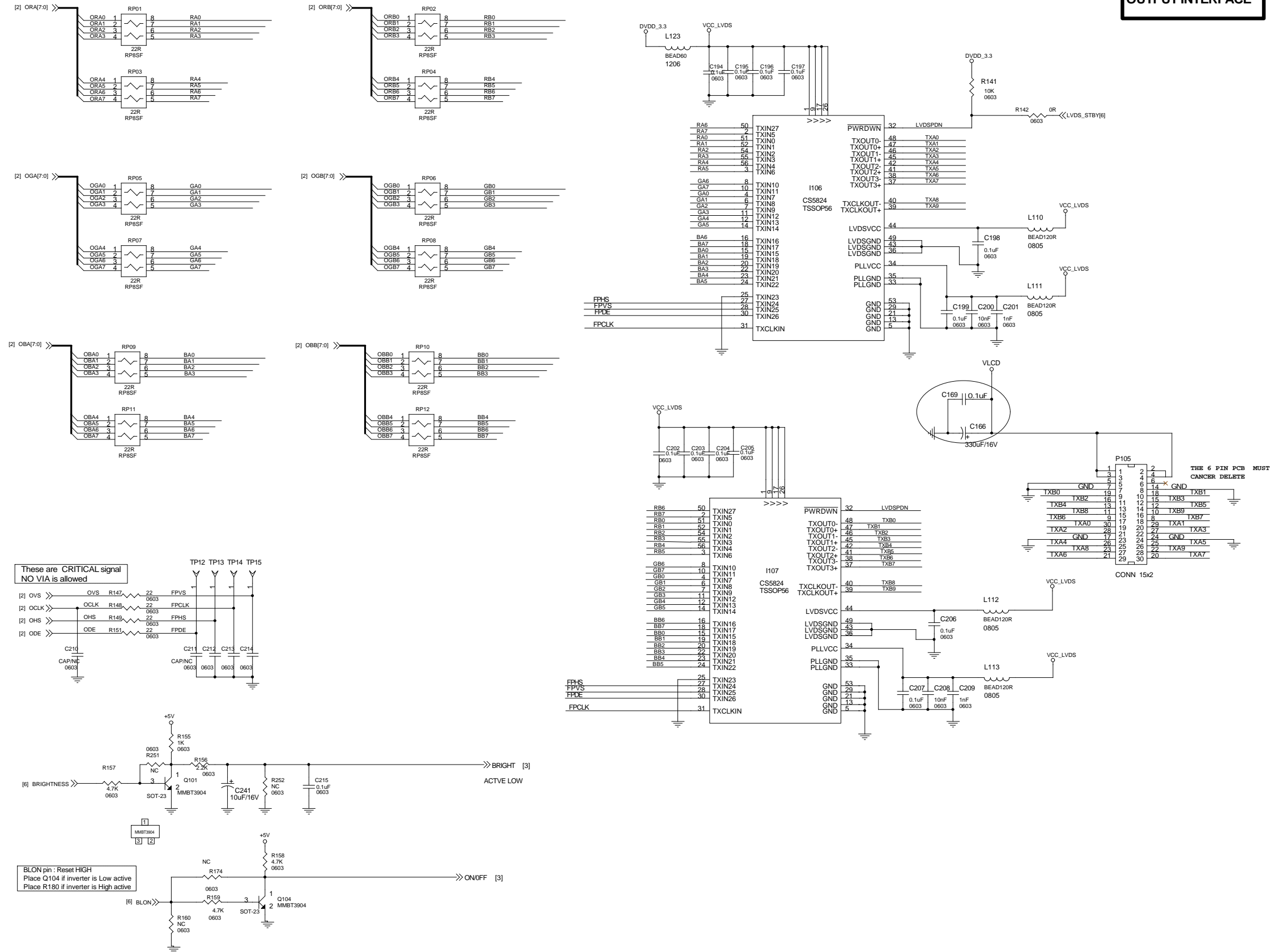
6.3. Input Interface



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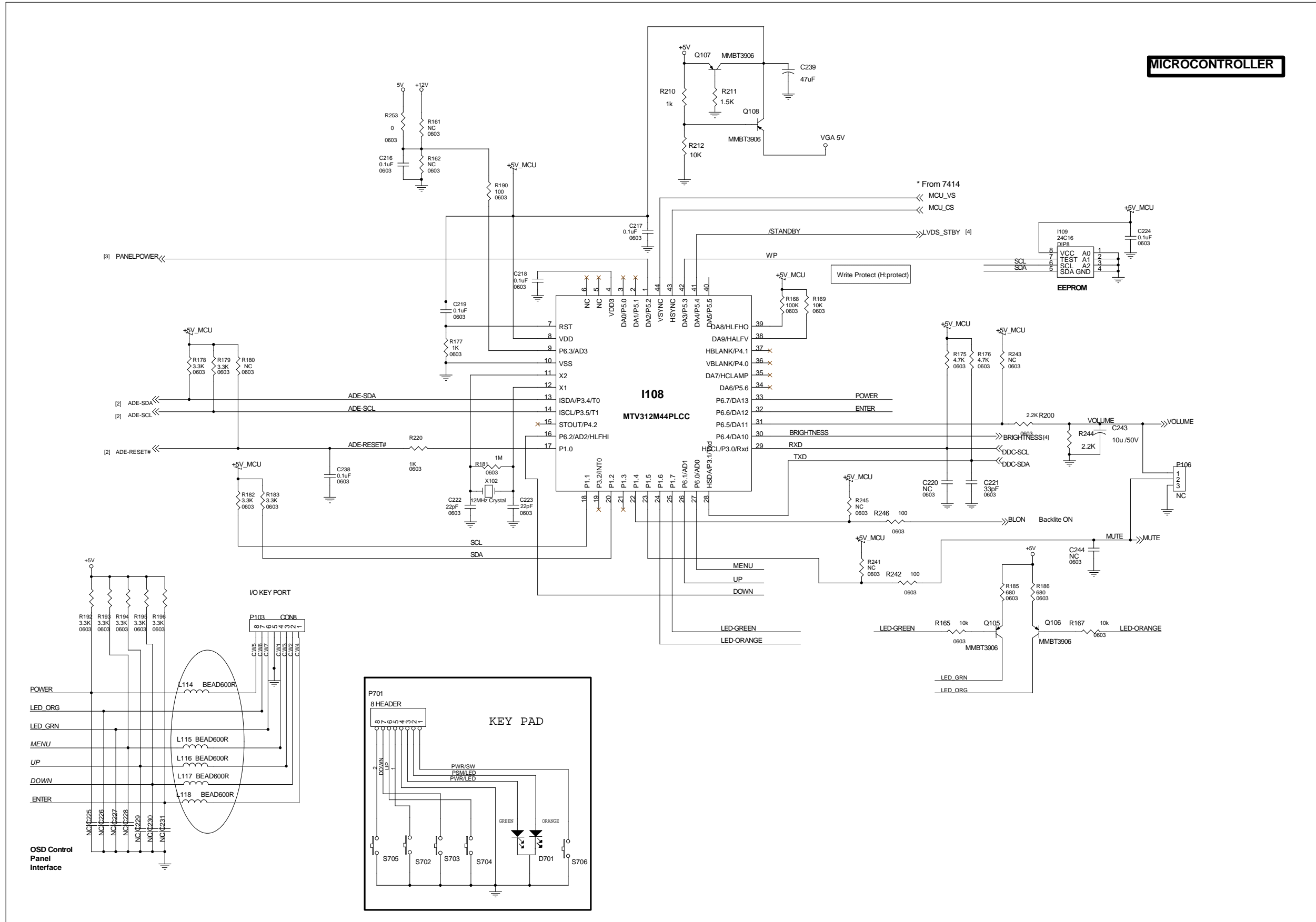
6.4. Output Interface

OUTPUT INTERFACE



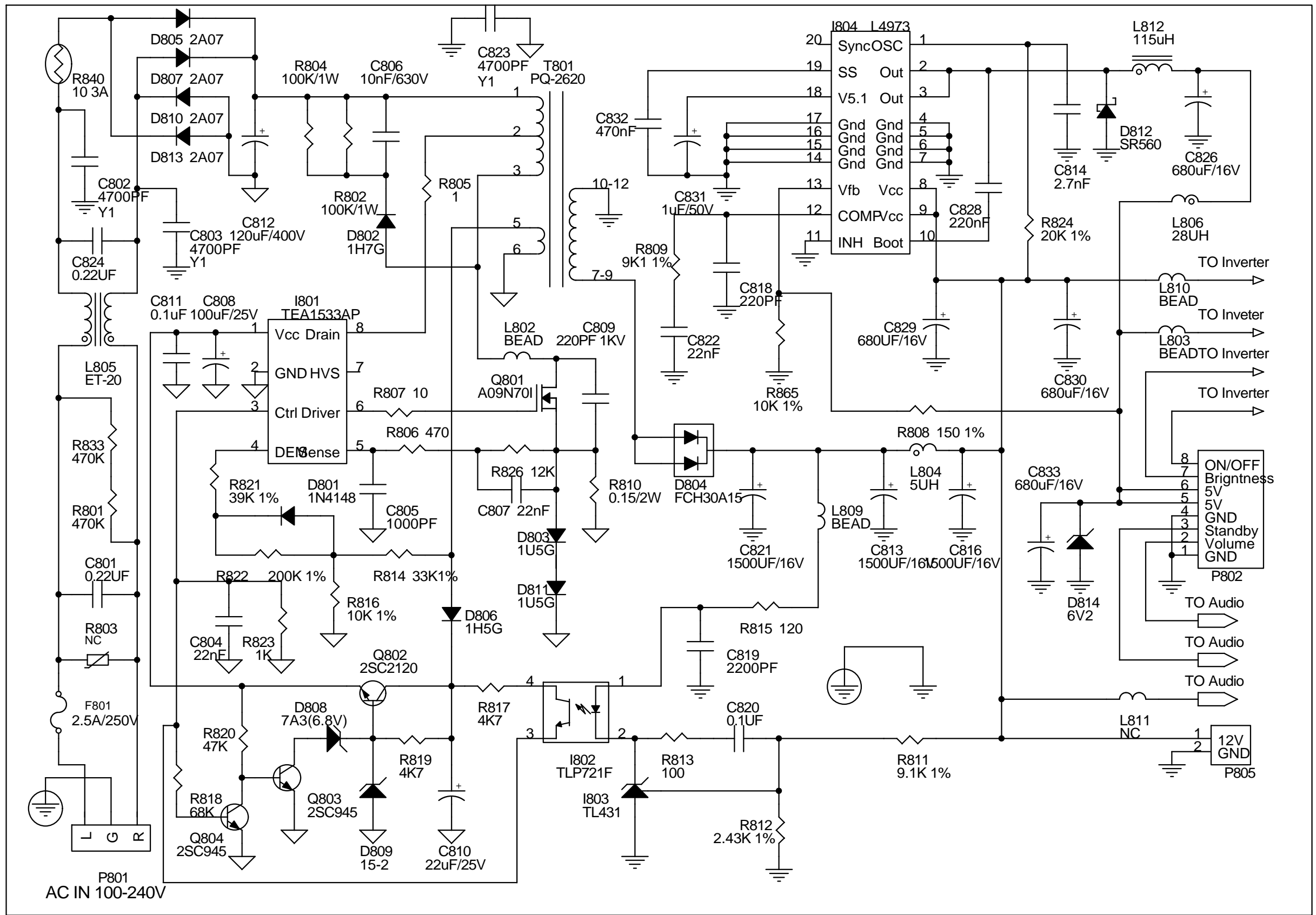
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6.5. MICROCONTROLLER



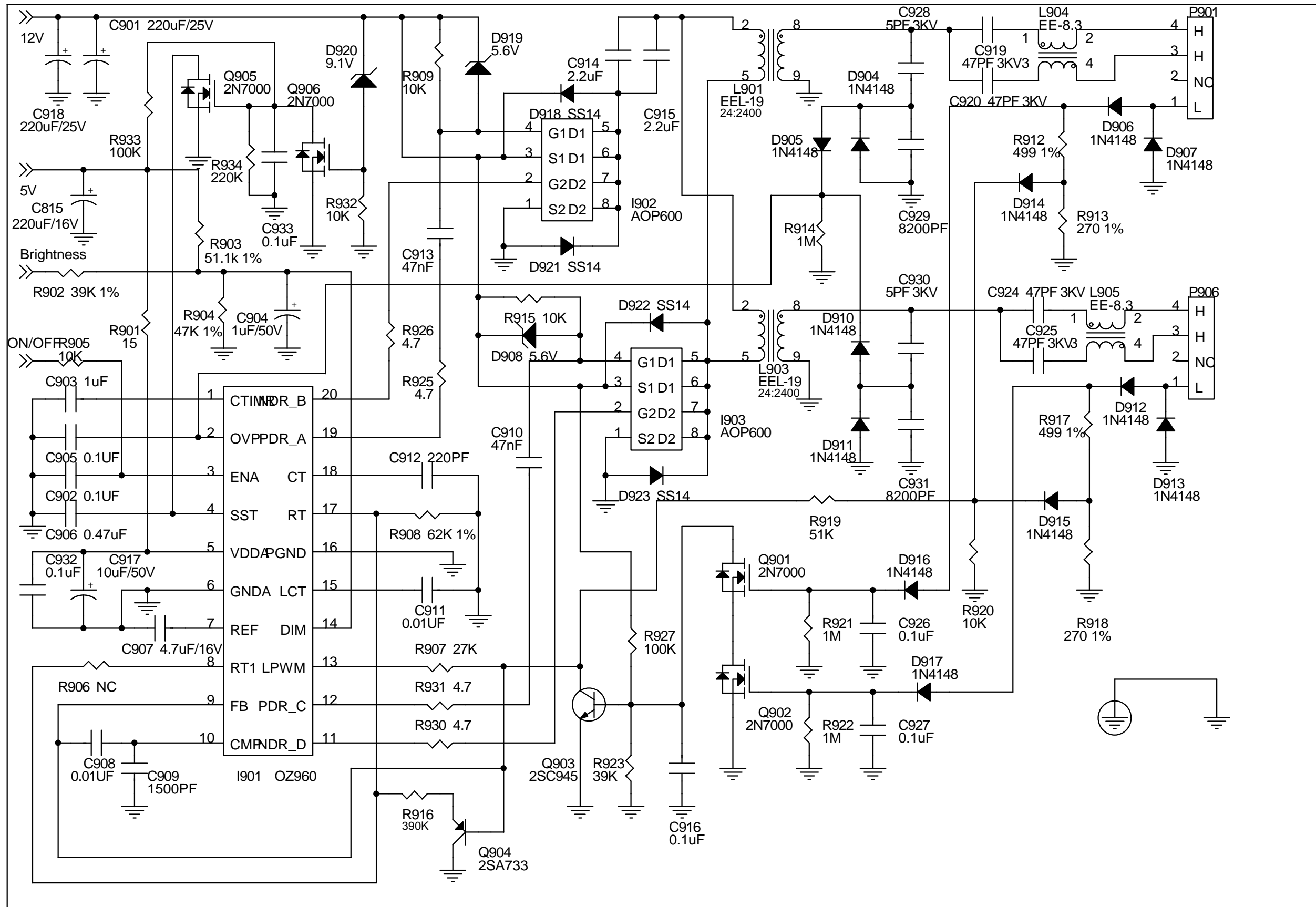
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6.6. POWER PCB



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6.7. INVERTER



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7. WORKING THEOREM

A. DC-DC CONVERTER

This brick convert is the 12V input voltage to 5V output for panel use and system controller use . It consists of a PWM IC (L4973 I804), flywheel diode (D812 SR560), buck choke (L812) and capacitor C826.

I804 (L4973) is a PWM generator working at 200KHz.

5V Out put at 2,3 pin

VCC 12V In put at 8 pin

B. Scaling controller

The ADC is to convert RGB analog signal to digital signal that scaling chip can acknowledge.

The HSYNC input receives a logic signal and provides the frequency reference for pixel clock generation.

The scaling IC is to converts the input signal ranging from VGA to SXGA into SXGA resolution that panel can acknowledge.

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When power is first applied, the ADE3XXX is asynchronously reset from a pin. The uC typically programs the ADE3XXX with a number of default values and sets up the ADE3XXX to identify activity on any of the input pins. All preconfigured values and RAMs, such as DVI settings, line-lock PLL settings, video input modes (YUV), OSD characters, LCD timing values (output sequencer), scale kernels, gamma curves, sRGB color warp, APC dithering, output pin configuration (OMUX), etc. can be preloaded into the ADE3XXX.

The typical end state is that the ADE3XXX is initialized into a low power mode, ready to turn active once the power button is pressed. activity detect When the monitor has been powered on, the inputs can be monitored for active video sources. Based on the activity monitors, the uC chooses an input or power down state.

SMEAS 40 sync / timing measurement Once an input source is selected, all available information on frequencies and line/pixel counts is measured for the selected source and made available to the uC.

SMEAS 40 mode set Once the uC has determined the matching video mode or calculated a video mode using a GTF algorithm, the datapath is programmed to drive the flat panel. Clock frequencies for the internal memory and datapath are also set at this time. autotune When the uC calls for an autotune, the uC sets up an iterative loop to search for the best phase, gain, offset, etc. At each step of the loop, the uC kicks off a test in which the ADE3XXX which performs extensive statistical analysis of the incoming data stream. The results of the analysis are made available to the uC which is responsible for the optimization algorithm SRT digital contrast / brightness In response to user OSD control, the uC can program single 8b registers that set brightness and contrast for each color channel independently.

SRGB 80 white point control In response to user OSD control, the uC can program three 8b registers that set the white point for the output.

SRGB 80 gamma adjustment The uC can program the gamma RAMs to implement 10b accurate color transformations.

GAMMA 92 sRGB control The SRGB block allows simple, intuitive color control with just a few registers.

SRGB 80 pattern generation For production testing, the ADE3XXX can be programmed by the uC to output a wide set of test patterns.

PGEN 74 flicker reduction For smart panel applications, the uC can set up the flicker detection block to report any correlation with the polarity inversion signal. The uC can then change the polarity inversion to a non-correlating pattern to eliminate flicker.

HDCP The ADE3XXX contains the BlockCipher and Decryption functions - interactions over DDC are managed by the uC for maximum flexibility. The uC models the slow (frame rate, e.g. 60Hz) authentication handshaking and state machine whereas the ADE3XXX handles the fast (line rate, e.g. 50kHz) decryption state machine.

HDCP 34 backlight control The ADE3XXX provides two PWM outputs for direct control of the

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power components in a typical backlight. The uC sets up the registers and enables the function.
PWM 97

Table 1: Pin Description

Pin #	Name	Type	Description
1	YUV6	Input TV	Video input port: Data 6
2	YUV5	Input TV	Video input port: Data 5
3	YUV4	Input TV	Video input port: Data 4
4	YUV3	Input TV	Video input port: Data 3
5	YUV2	Input TV	Video input port: Data 2
6	YUV1	Input TV	Video input port: Data 1
7	YUV0	Input TV	Video input port: Data 0
8	YUVCLK	Input TV	Video input port: Clock
9	DVDD18	Power Digital	1.8V VDD
10	DGND	Power Digital	Ground
11	DVDD18	Power Digital	1.8V VDD
12	DGND	Power Digital	Ground
13	AGND	Power Analog	Ground
14	AVDD18	Power Analog	1.8V VDD
15	AVDD33	Power Analog	3.3V VDD
16	RX2M	Input DVI	Receiver Channel 2 MINUS input (RED)
17	RX2P	Input DVI	Receiver Channel 2 PLUS input (RED)
18	AGND	Power Analog	Ground
19	AVDD33	Power Analog	3.3V VDD
20	RX1M	Input DVI	Receiver Channel 1 MINUS input (GREEN)
21	RX1P	Input DVI	Receiver Channel 1 PLUS input (GREEN)
22	AVDD33	Power Analog	3.3V VDD
23	RX0M	Input DVI	Receiver Channel 0 MINUS input (BLUE)
24	RX0P	Input DVI	Receiver Channel 0 PLUS input (BLUE)
25	AVDD33	Power Analog	3.3V VDD
26	AGND	Power Analog	Ground
27	RXCP	Input DVI	Receiver Clock Channel PLUS input
28	RXCM	Input DVI	Receiver Clock Channel MINUS input
29	AVDD33	Power Analog	3.3V VDD
30	REXT	Passive	1% 475 Ohm resistor to Analog 3.3V VDD
31	AVDD33	Power Analog	3.3V VDD
32	AVDD33	Power Analog	3.3V VDD
33	AGND	Power Analog	Ground
34	AGND	Power Analog	Ground
35	AGND	Power Analog	Ground
36	RBIAS	Passive	1% 2.0 kOhm resistor to Analog Ground
37	AGND	Power Analog	Ground
38	AVDD18	Power Analog	1.8V VDD
39	AGND	Power Analog	Ground
40	AVDD33	Power Analog	3.3V VDD
41	AGND	Power Analog	Ground
42	AVDD18	Power Analog	1.8V VDD
43	AGND	Power Analog	Ground
44	AVDD18	Power Analog	1.8V VDD
45	AGND	Power Analog	Ground
46	AVDD18	Power Analog	1.8V VDD
47	XGND	Power Crystal	Oscillator Ground
48	XTAL_IN	Input Crystal	Oscillator input
49	XTAL_OUT	Output Crystal	Oscillator output
50	XVDD18	Power Crystal	Oscillator 1.8V VDD
51	LVDD18	Power Line	Lock PLL 1.8V VDD
52	LGND	Power Line	Lock PLL Ground

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- 53 CSYNC Input Composite Sync Input - for Sync On Green
- 54 VSYNC Input Vertical Sync Input
- 55 HSYNC Input Horizontal (or Composite) Sync Input
- 56 AGND Power Analog Ground
- 57 AGND Power Analog Ground
- 58 AVDD33 Power Analog 3.3V VDD
- 59 AVDD33 Power Analog 3.3V VDD
- 60 AGND Power Analog Ground
- 61 AVDD18 Power Analog 1.8V VDD
- 62 AGND Power Analog Ground
- 63 REFB Passive 1% 15.0 kOhm resistor to Analog Ground
- 64 REFMB Passive connect to Analog Ground
- 65 REFPB Passive 470nF capacitor to Analog Ground
- 66 AGND Power Analog Ground
- 67 AGND Power Analog Ground
- 68 INB Input Analog Video Port: Blue Channel input
- 69 AVDD33 Power Analog 3.3V VDD
- 70 AVDD33 Power Analog 3.3V VDD
- 71 REFCB Passive 100nF capacitor to Analog Ground
- 72 AGND Power Analog Ground
- 73 AVDD18 Power Analog 1.8V VDD
- 74 AVDD18 Power Analog 1.8V VDD
- 75 REFG Passive 1% 15.0 kOhm resistor to Analog Ground
- 76 REFMG Passive connect to Analog Ground
- 77 REFPG Passive 470nF capacitor to Analog Ground
- 78 AGND Power Analog Ground
- 79 AGND Power Analog Ground
- 80 ING Input Analog Video Port: Green Channel input
- 81 AVDD33 Power Analog 3.3V VDD
- 82 AVDD33 Power Analog 3.3V VDD
- 83 REFCG Passive 100nF capacitor to Analog Ground
- 84 AGND Power Analog Ground
- 85 AVDD18 Power Analog 1.8V VDD
- 86 AVDD18 Power Analog 1.8V VDD
- 87 REFR Passive 1% 15.0 kOhm resistor to Analog Ground
- 88 REFMR Passive connect to Analog Ground
- 89 REFPR Passive 470nF capacitor to Analog Ground
- 90 AGND Power Analog Ground
- 91 AGND Power Analog Ground
- 92 INR Input Analog Video Port: Red Channel input
- 93 AVDD33 Power Analog 3.3V VDD
- 94 AVDD33 Power Analog 3.3V VDD
- 95 REFCR Passive 100nF capacitor to Analog Ground
- 96 AGND Power Analog Ground
- 97 AVDD18 Power Analog 1.8V VDD
- 98 AVDD18 Power Analog 1.8V VDD
- 99 TST_SCAN Input connect to Digital Ground
- 100 DGND Power Digital Ground
- 101 DVDD33 Power Digital 3.3V VDD
- 102 OBA7 Output Output Port A: Blue Data 7
- 103 OBA6 Output Output Port A: Blue Data 6
- 104 OBA5 Output Output Port A: Blue Data 5
- 105 DGND Power Digital Ground
- 106 OBA4 Output Output Port A: Blue Data 4
- 107 OBA3 Output Output Port A: Blue Data 3
- 108 OBA2 Output Output Port A: Blue Data 2
- 109 OBA1 Output Output Port A: Blue Data 1

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110 OBA0 Output Output Port A: Blue Data 0
111 DVDD33 Power Digital 3.3V VDD
112 DGND Power Digital Ground
113 OGA7 Output Output Port A: Green Data 7
114 OGA6 Output Output Port A: Green Data 6
115 OGA5 Output Output Port A: Green Data 5
116 OGA4 Output Output Port A: Green Data 4
117 OGA3 Output Output Port A: Green Data 3
118 OGA2 Output Output Port A: Green Data 2
119 OGA1 Output Output Port A: Green Data 1
120 OGA0 Output Output Port A: Green Data 0
121 DVDD18 Power Digital 1.8V VDD
122 DGND Power Digital Ground
123 DVDD18 Power Digital 1.8V VDD
124 DGND Power Digital Ground
125 DVDD33 Power Digital 3.3V VDD
126 ORA7 Output Output Port A: Red Data 7
127 ORA6 Output Output Port A: Red Data 6
128 ORA5 Output Output Port A: Red Data 5
129 ORA4 Output Output Port A: Red Data 4
130 ORA3 Output Output Port A: Red Data 3
131 ORA2 Output Output Port A: Red Data 2
132 ORA1 Output Output Port A: Red Data 1
133 ORA0 Output Output Port A: Red Data 0
134 DVDD33 Power Digital 3.3V VDD
135 DGND Power Digital Ground
136 ODE Output Output Data Enable
137 OHS Output Output Horizontal Sync
138 OCLK Output Output Clock
139 OVS Output Output Vertical Sync
140 DVDD18 Power Digital 1.8V VDD
141 DGND Power Digital Ground
142 DVDD18 Power Digital 1.8V VDD
143 DGND Power Digital Ground
144 OBB7 Output Output Port B: Blue Data 7
145 OBB6 Output Output Port B: Blue Data 6
146 OBB5 Output Output Port B: Blue Data 5
147 OBB4 Output Output Port B: Blue Data 4
148 DVDD33 Power Digital 3.3V VDD
149 DGND Power Digital Ground
150 OBB3 Output Output Port B: Blue Data 3
151 OBB2 Output Output Port B: Blue Data 2
152 OBB1 Output Output Port B: Blue Data 1
153 OBB0 Output Output Port B: Blue Data 0
154 OGB7 Output Output Port B: Green Data 7
155 OGB6 Output Output Port B: Green Data 6
156 OGB5 Output Output Port B: Green Data 5
157 OGB4 Output Output Port B: Green Data 4
158 DVDD33 Power Digital 3.3V VDD
159 DGND Power Digital Ground
160 OGB3 Output Output Port B: Green Data 3
161 OGB2 Output Output Port B: Green Data 2
162 OGB1 Output Output Port B: Green Data 1
163 OGB0 Output Output Port B: Green Data 0
164 DVDD18 Power Digital 1.8V VDD
165 DGND Power Digital Ground
166 DVDD18 Power Digital 1.8V VDD

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167 DGND Power Digital Ground
168 ORB7 Output Output Port B: Red Data 7
169 ORB6 Output Output Port B: Red Data 6
170 ORB5 Output Output Port B: Red Data 5
171 ORB4 Output Output Port B: Red Data 4
172 DVDD33 Power Digital 3.3V VDD
173 DGND Power Digital Ground
174 ORB3 Output Output Port B: Red Data 3
175 ORB2 Output Output Port B: Red Data 2
176 ORB1 Output Output Port B: Red Data 1
177 ORB0 Output Output Port B: Red Data 0
178 DVDD18 Power Digital 1.8V VDD
179 DGND Power Digital Ground
180 DVDD18 Power Digital 1.8V VDD
181 DGND Power Digital Ground
182 CLKOUT Output not to be connected - reserved
183 CLKIN Input to be connected to Digital Ground - reserved
185 DVDD33 Power Digital 3.3V VDD
186 DGND Power Digital Ground
191 DVDD18 Power Digital 1.8V VDD
192 DGND Power Digital Ground
193 DVDD18 Power Digital 1.8V VDD
194 DGND Power Digital Ground
199 DVDD18 Power Digital 1.8V VDD
200 DGND Power Digital Ground
201 DVDD18 Power Digital 1.8V VDD
202 DGND Power Digital Ground
203 SCL Input I2C Clock
204 SDA Open Drain
205 XCLK Output Crystal clock buffered output
206 XCLK_EN Input Crystal clock output enable
 0 : xclk output disabled
 1 : xclk output active
207 RESETN Input Reset input, Active Low

MTV312M64

The MTV312M micro-controller is an 8051 CPU core embedded device especially tailored for CRT/LCD

Monitor applications. It includes an 8051 CPU core, 1024-byte SRAM, 14 built-in PWM DACs, VESA DDC interface, 4-channel A/D converter, and a 64K-byte internal program Flash-ROM.

A “CMOS output pin” means it can sink and drive at least 4mA current. It is not recommended to use such

pin as input function.

A “open drain pin” means it can sink at least 4mA current but only drive 10~20uA to VDD. It can be used as input or output function and needs an external pull up resistor.

A “8051 standard pin” is a pseudo open drain pin. It can sink at least 4mA current when output is at low level, and drives at least 4mA current for 160nS when output transits from low to high, then keeps driving at 100uA to maintain the pin at high level. It can be used as input or output function. It needs an external pull up resistor when driving heavy load device.

POWER CONFIGURATION

The MTV312M can work on 5V or 3.3V power supply system.

In 5V power system, the VDD pin is connected to 5V power and the VDD3 needs an external capacitor, all

output pins can swing from 0~5V, input pins can accept 0~5V input range.

And ADC conversion range is 5V. However, X1 and X2 pins must be kept below 3.3V.

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In 3.3V power system, the VDD and VDD3 are connected to 3.3V power, all output pins swing from 0~3.3V, HSYNC, VSYNC and open drain pin can accept 0~5V input range, other pins must be kept below 3.3V. And the ADC conversion range is 3.3V.

INVERTER

In order to drive the CCFLs embedded in the panel module, there is a half bridge inverter to convert by the controller.

The input 12V up to hundreds of AC voltage output.

The inverter is formed by symmetric in order to drive the separate lamp modules.

The input stage consists of a PWM controller, half bridge inverter, and switching MOSFET to convert DC input into AC output.

The output stage consists of a tuning capacitor, coupling capacitor, transformer, push-pull MOSFET pair to boost AC output up to hundreds of voltage.

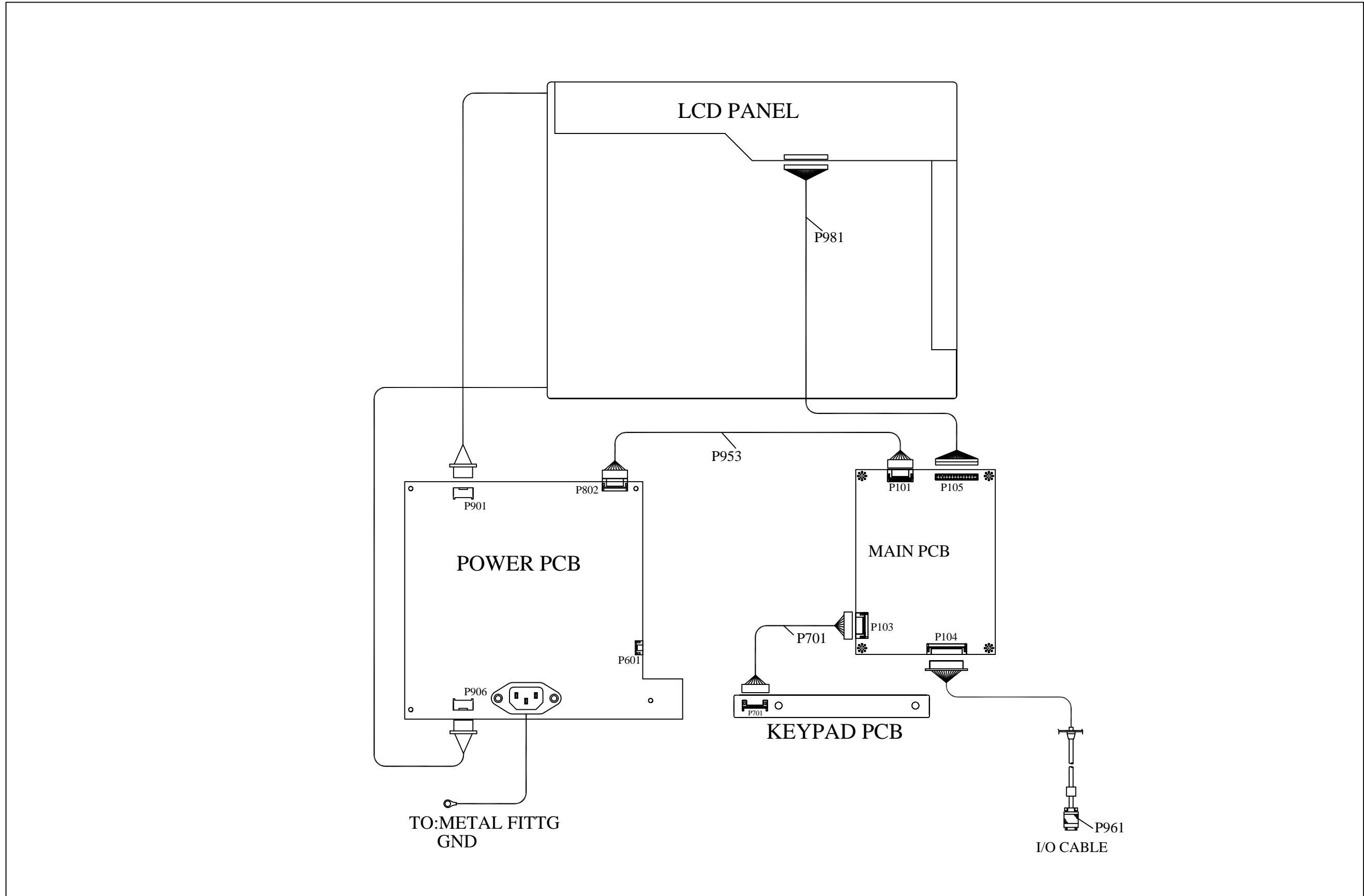
And one resistor is serial to lamp for output voltage feedback.

There are two signal to control the inverter which come from system.

Logic "high" level which send to I901 is turn on the inverter.

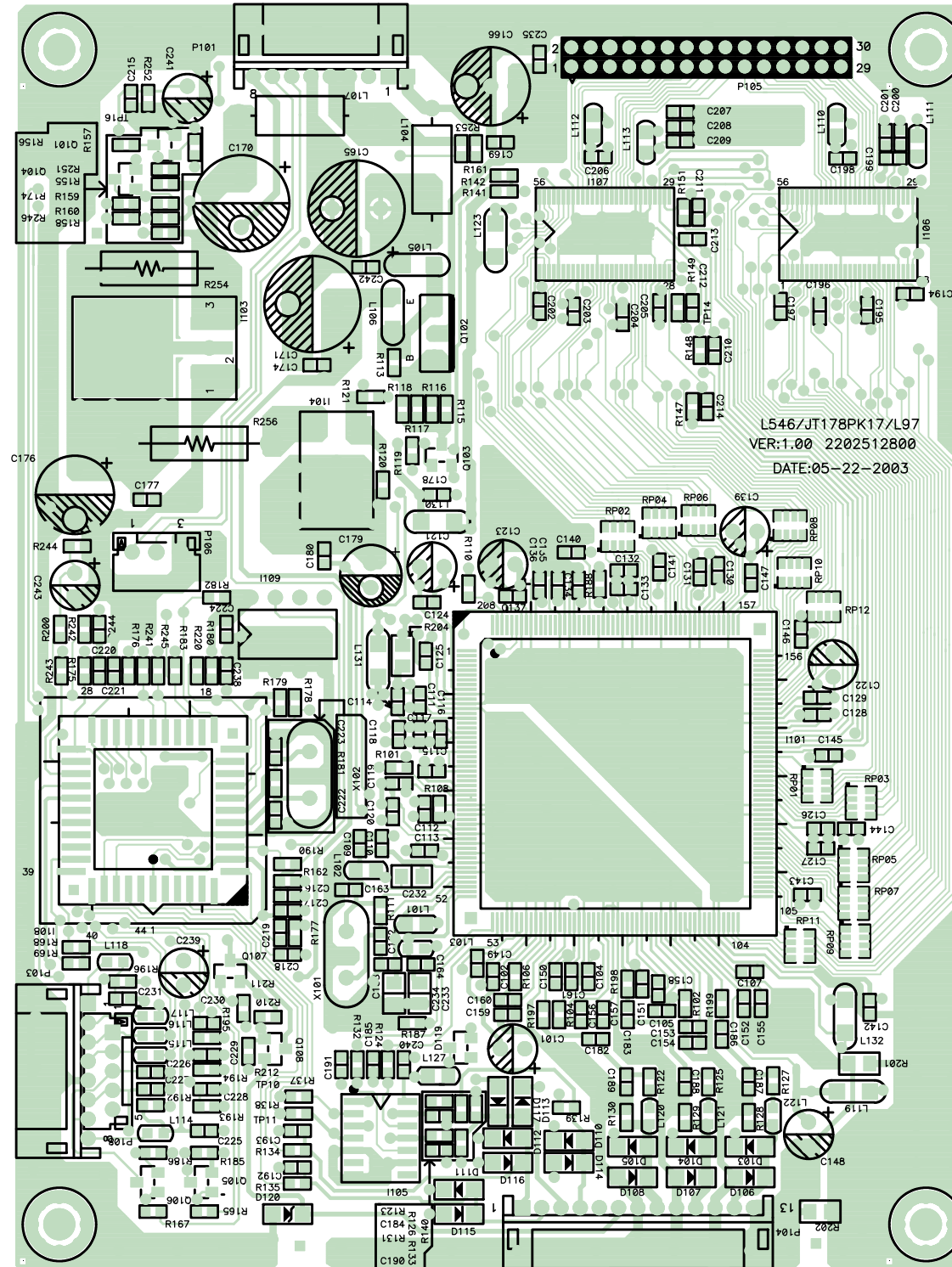
BRI signal control brightness by DC level which was integral from PWM signal.

8. Wiring Diagram

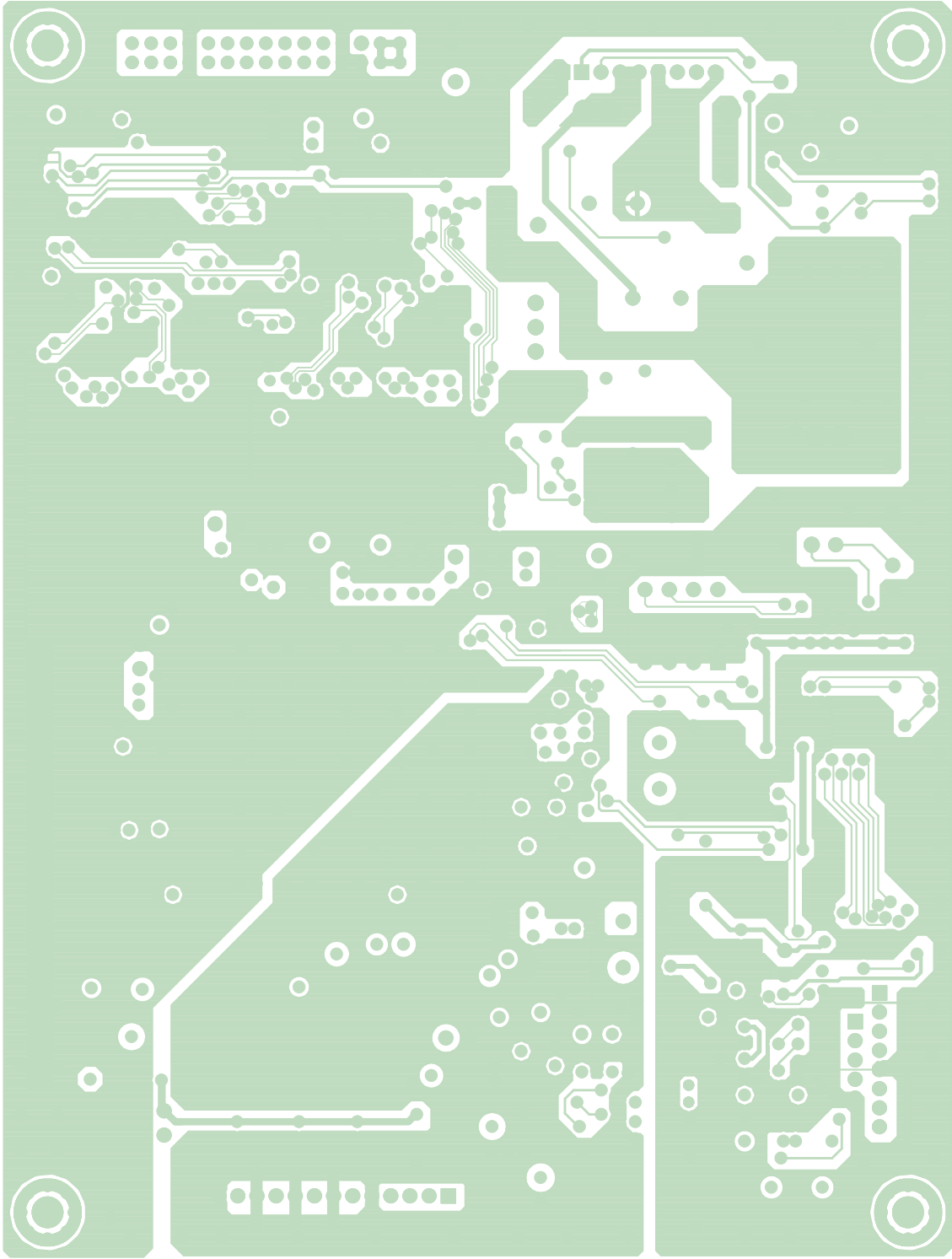


9. PCB Layout

9.1. MAIN PCB TOP VIEW

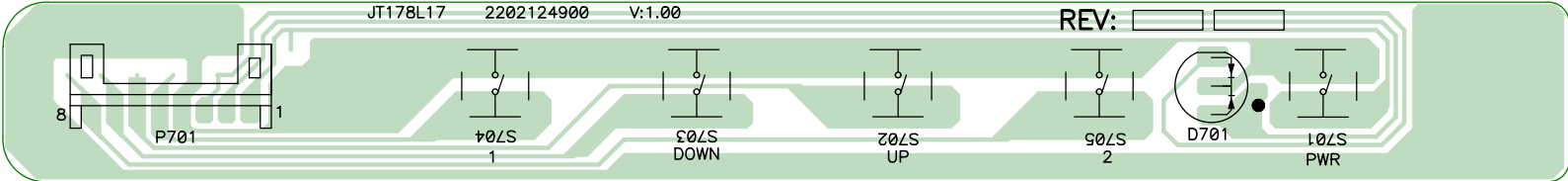


9.2. MAIN PCB BOTTOM VIEW

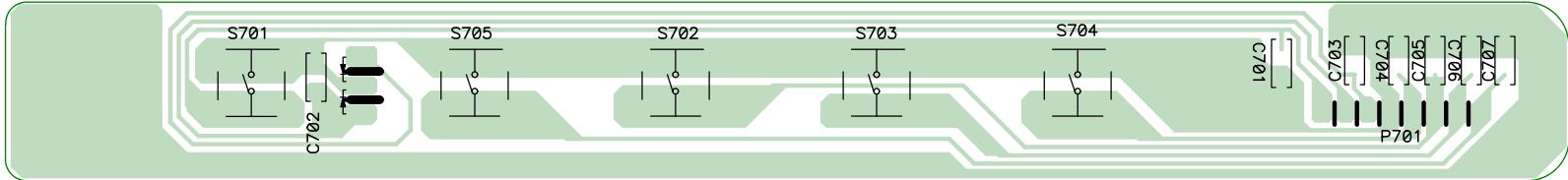


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9.3. CON PCB TOP VIEW

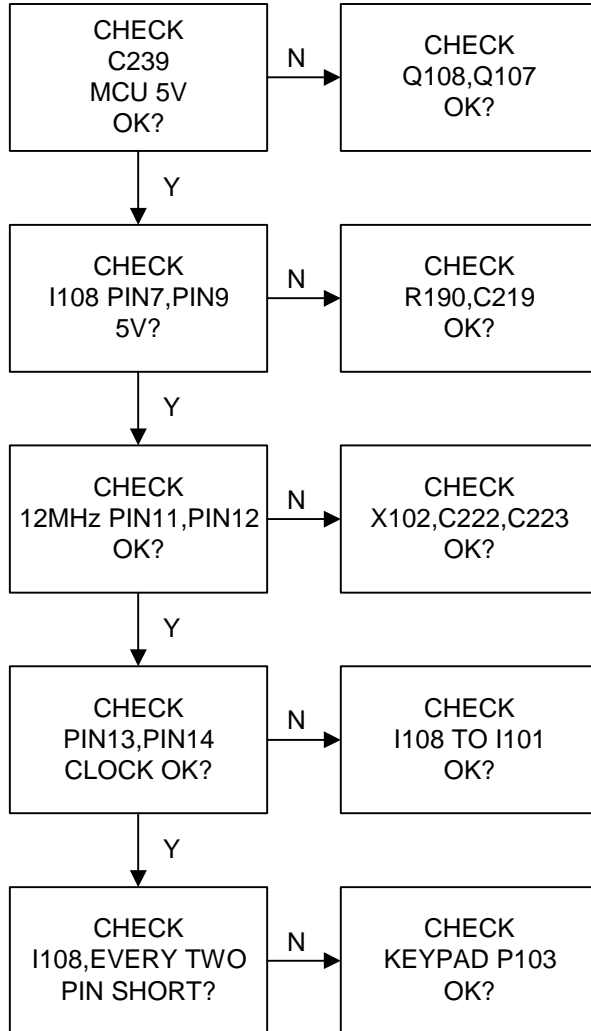


9.4. CON PCB BOTTOM VIEW



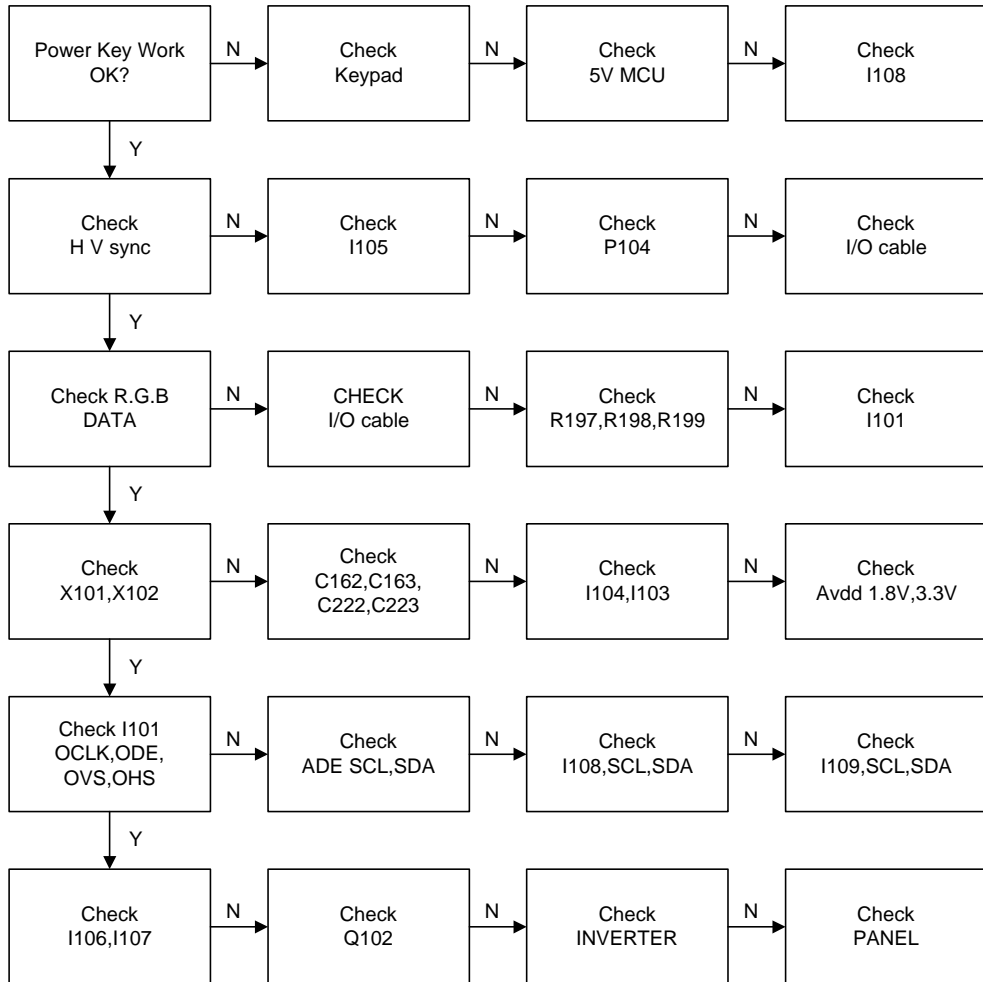
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10.2. MCU NO FUNCTION



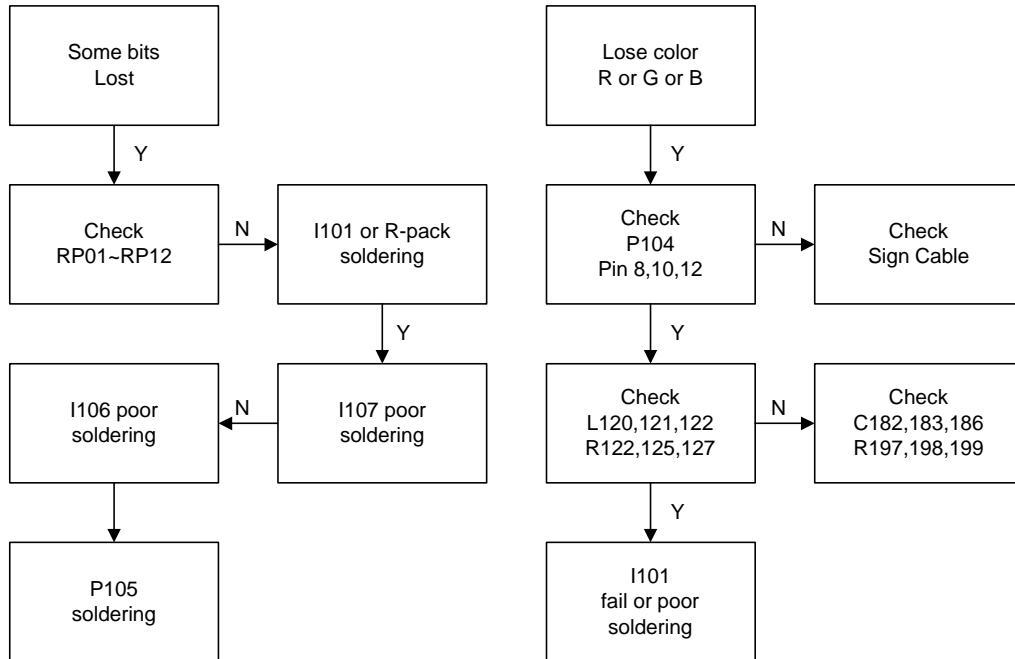
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10.3. NO DISPLAY



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10.4. LOSE COLOR



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11. ADJUSTMENT

11.1. ADJUSTMENT CONDITIONS AND PRECAUTIONS

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.
3. ESD protection is needed before adjustment.

11.2. MAIN ADJUSTMENTS

NO.	FUNCTION	DESIGNATION
1.	WHITE BALANCE	FUNCTION KEY
2.	GEOMETRY	FUNCTION KEY

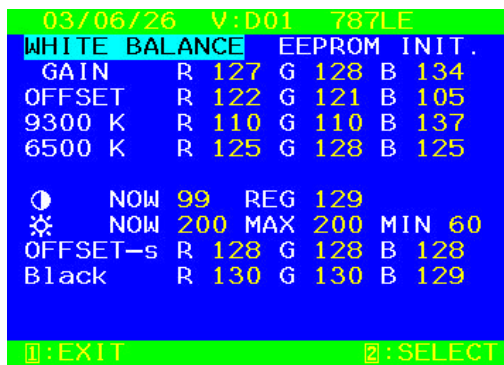
11.3. ALIGNMENT PROCEDURES

Adjustment Conditions and Precautions:

- (A). Power supply voltage:
AC 110/120V \pm 10% 60 Hz \pm 5%, AC 220/240V \pm 10% 50 Hz \pm 5%.
- (B). Warm up time:
The display must be power ON for at least 30 minutes at full white pattern before starting alignments.
This is especially critical in color temperature and white balance adjustments.
- (C). Signals: reference the front detail specifications and timing table.
Video : reference the front detail specifications.

1. Adjustment of White Balance:

- A. TIMING: 1280x1024 64KHz/60Hz.
- B. PATTERN: 5 Blocks.
- C. LCD MONITOR set to 1280x1024 80K/75Hz BURN IN and warm up over 30 minutes.
- D. CA110 color analyzer at the center of screen and along a perpendicular to the screen at 20cm from the display.
- E. Power turn off, Press “ ” and “**2**” and turn on power at the same time after power LED is on, release “ ” and “**2**” key, Then press “**1**” key go to factory mode.
(Fig.1)



(Fig.1)

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F. Adjust Color Temperature:

(1) EEPROM INIT (5 BLOCKS):

Press “ ” key move cursor to EEPROM INIT, Press key then monitor will INIT ADC value.

(2) Press “ ” key move cursor to “White Balance”, Press key do white balance adjustment.

(3) Press “ ” key move cursor to “Color Temperature Adjust”, Press key, Then OSD will display Fig.2



(Fig.2)

(4) 9300K verify: move cursor to 9300K Press key.

Press “ ”, “ ” key adjust R.G.B value

$$x=0.283 \pm 0.03$$

$$y=0.298 \pm 0.03$$

Press key return to Fig.2

(5) 6500K verify: Repeat (4) press “ ”, “ ” move cursor to 6500K press key

$$x=0.310 \pm 0.03$$

$$y=0.330 \pm 0.03$$

$$Y \quad 200 \text{ cd/m}^2$$

(6) Press key go back to Fig.2, Then press key return to Fig.1, Pov key OFF/ON quit factory mode.

G. Color Temperature & Luminance Verify:

BRIGHTNESS MAX, CONTRAST MAX

$$9300K: x=0.283 \pm 0.03 \quad y=0.298 \pm 0.03$$

$$6500K: x=0.310 \pm 0.03 \quad y=0.330 \pm 0.03 \quad Y \quad 200 \text{ cd/m}^2$$

2. Geometry:

- Set cross-hatch pattern and preset timing as timing table listed.
- Change to each mode in turn and wait for the monitor finish auto-alignment and save process before change to next mode.
- Until all of modes are agjusted, exit OSD menu and press PWR OFF to exit factory mode.

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12. ELECTRICAL PARTS LIST

When you place a parts order, be sure to indicate the following data on the order:

- Location No.
- Parts No.
- Description

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
MAIN P.C.BOARD					
C101		2333347613	CAP,ELE 105°C	EC 47u/ 16V	5*11 P=2.5
C102		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C104		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C105		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C107		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C109		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C110		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C111		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C112		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C113		2346110296	CAP,CHIP 125°C	CS 0603/X7R/50V	1000p K
C114		2346110396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.01u K
C115		2341110196	CAP,CHIP 125°C	CS 0603/COG/50V	100p J
C116		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C117		2346110296	CAP,CHIP 125°C	CS 0603/X7R/50V	1000p K
C118		2346110396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.01u K
C119		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C120		2346110396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.01u K
C121		2333347613	CAP,ELE 105°C	EC 47u/ 16V	5*11 P=2.5
C122		2333347613	CAP,ELE 105°C	EC 47u/ 16V	5*11 P=2.5
C123		2333347613	CAP,ELE 105°C	EC 47u/ 16V	5*11 P=2.5
C124		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C125		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C126		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C127		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C128		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C129		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C130		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C131		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C132		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C133		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C134		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C135		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C136		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C137		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C138		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C139		2333347613	CAP,ELE 105°C	EC 47u/ 16V	5*11 P=2.5
C140		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C141		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C142		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C143		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C144		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C145		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C146		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C147		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C148		2333347613	CAP,ELE 105°C	EC 47u/ 16V	5*11 P=2.5
C149		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C150		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C151		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C152		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C153		2346747496	CAP,CHIP 85°C	CS 0603/Y5V/16V	0.47u Z
C154		2341110196	CAP,CHIP 125°C	CS 0603/COG/50V	100p J
C155		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C156		2346747496	CAP,CHIP 85°C	CS 0603/Y5V/16V	0.47u Z
C157		2341110196	CAP,CHIP 125°C	CS 0603/COG/50V	100p J
C158		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
C159		2346747496	CAP,CHIP 85°C	CS 0603/Y5V/16V	0.47u Z
C160		2341110196	CAP,CHIP 125°C	CS 0603/COG/50V	100p J
C161		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C162		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V	22p J
C163		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V	22p J
C164		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C166		233333791	CAP,ELE 105°C	EC 330u/ 16V	8*11 P=5.0
C169		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C170		2333447791	CAP,ELE 105°C	EC 470u/ 25V	10*13.0 P=5.0
C171		2333347791	CAP,ELE 105°C	EC 470u/ 16V	10*12.5 P=5.0
C176		233333791	CAP,ELE 105°C	EC 330u/ 16V	8*11 P=5.0
C177		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C178		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C179		2333347613	CAP,ELE 105°C	EC 47u/ 16V	5*11 P=2.5
C180		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C182		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C183		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C185		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V	22p J
C186		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C191		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V	22p J
C192		2341147096	CAP,CHIP 125°C	CS 0603/COG/50V	47p J
C194		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C195		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C196		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C197		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C198		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C199		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C200		2346110396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.01u K
C201		2346110296	CAP,CHIP 125°C	CS 0603/X7R/50V	1000p K
C202		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C203		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C204		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C205		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C206		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C207		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C208		2346110396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.01u K
C209		2346110296	CAP,CHIP 125°C	CS 0603/X7R/50V	1000p K
C215		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C216		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C217		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C218		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C219		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C221		2341133096	CAP,CHIP 125°C	CS 0603/COG/50V	33p J
C222		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V	22p J
C223		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V	22p J
C224		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C232		2347710696	CAP,CHIP 85°C	CS 0805/Y5V/10V	10u Z
C233		2347610596	CAP,CHIP 85°C	CS 0805/Y5V/16V	1.0u Z
C234		2347610596	CAP,CHIP 85°C	CS 0805/Y5V/16V	1.0u Z
C238		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C239		2333347613	CAP,ELE 105°C	EC 47u/ 16V	5*11 P=2.5
C240		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C241		2333310613	CAP,ELE 105°C	EC 10u/ 16V	5*11 P=2.5
C243		2333610613	CAP,ELE 105°C	EC 10u/ 50V	5*11 P=2.5
D103		2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5 ⁶ TEMIC GS08	
D104		2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5 ⁶ TEMIC GS08	
D105		2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5 ⁶ TEMIC GS08	
D106		2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5 ⁶ TEMIC GS08	
D107		2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5 ⁶ TEMIC GS08	
D108		2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5 ⁶ TEMIC GS08	
D114		2364503996	DIODE,ZENER SMD	BZV55-C5V6 PHILIPS	
D115		2364503996	DIODE,ZENER SMD	BZV55-C5V6 PHILIPS	
D116		2364503996	DIODE,ZENER SMD	BZV55-C5V6 PHILIPS	
D117		2364503996	DIODE,ZENER SMD	BZV55-C5V6 PHILIPS	
D119	RA	2364201296	DIODE,RECT(SMD)	BAT54C-7 SOT-23 DII	

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
D119	RB	2364201896	DIODE,RECT(SMD)	BAT54C	CHENMKO SOT-23
D120		2364503996	DIODE,ZENER SMD	BZV55-C5V6	PHILIPS
I101		2365928496	IC,DIGITAL SMD	ADE3000SX PQFP208	ST
I103	RA	2365807496	IC,LINEAR(SMD)	AIC1084-33CM	AIC TO-263
I103	RB	2365810796	IC,LINEAR(SMD)	AP1084K33A(3.3V)	ATC TO-263
I104	RA	2365810896	IC,LINEAR(SMD)	AP1117DA(ADJ)	ATC TO-252
I104	RB	2365812096	IC,LINEAR(SMD)	AIC1117CE-ADJ	AIC TO-252
I105	RA	2365922496	IC,DIGITAL SMD	74LVC14A	PHILIPS SO14
I105	RB	2365921996	IC,DIGITAL SMD	SN74LVC14AD	TI
I106	RA	2365920096	IC,DIGITAL SMD	THC63LVDM83A	THINE
I106	RB	2365917996	IC,DIGITAL SMD	SN75LVDS83DGG	TI
I106	RC	2365926196	IC,DIGITAL SMD	NT7181CF TSSOP	NOVATEK
I106	RD	2365928896	IC,DIGITAL SMD	M385 TSSOP-56P	MRT
I107	RA	2365920096	IC,DIGITAL SMD	THC63LVDM83A	THINE
I107	RB	2365917996	IC,DIGITAL SMD	SN75LVDS83DGG	TI
I107	RC	2365926196	IC,DIGITAL SMD	NT7181CF TSSOP	NOVATEK
I107	RD	2365928896	IC,DIGITAL SMD	M385 TSSOP-56P	MRT
I108		2365928596	IC,DIGITAL SMD	MTV312MV64 PLCC44	MYSON
I109	RA	2365316200	IC,LINEAR	24LC16B DIP-8	MICROCHI
I109	RB	2365424300	IC,DIGITAL	M24C16-WBN6T	ST PDIP8
I109	RC	2365424000	IC,DIGITAL	AM24LC16(PDIP-8L)	ATC
L101		2379812156	BEAD,HI-IMPEDANCE	Z= 120ohm(1MHZ~) 0805	300mA
L102		2379812156	BEAD,HI-IMPEDANCE	Z= 120ohm(1MHZ~) 0805	300mA
L103		2379310166	BEAD,HI-IMPEDANCE	Z= 100ohm(50MHZ~) 0603	200mA
L106		2379560086	BEAD,HI-CURRENT	Z= 60ohm 1206 I>3.0A	
L107		2235547813	RES,MTL 2	RS 2WS 0.47ohm J P=15.0	
L110		2379812156	BEAD,HI-IMPEDANCE	Z= 120ohm(1MHZ~) 0805	300mA
L111		2379812156	BEAD,HI-IMPEDANCE	Z= 120ohm(1MHZ~) 0805	300mA
L112		2379812156	BEAD,HI-IMPEDANCE	Z= 120ohm(1MHZ~) 0805	300mA
L113		2379812156	BEAD,HI-IMPEDANCE	Z= 120ohm(1MHZ~) 0805	300mA
L114		2379860166	BEAD,HI-IMPEDANCE	Z= 600ohm(50MHZ~) 0805	200mA
L115		2379860166	BEAD,HI-IMPEDANCE	Z= 600ohm(50MHZ~) 0805	200mA
L116		2379860166	BEAD,HI-IMPEDANCE	Z= 600ohm(50MHZ~) 0805	200mA
L117		2379860166	BEAD,HI-IMPEDANCE	Z= 600ohm(50MHZ~) 0805	200mA
L118		2379860166	BEAD,HI-IMPEDANCE	Z= 600ohm(50MHZ~) 0805	200mA
L119		2379560086	BEAD,HI-CURRENT	Z= 60ohm 1206 I>3.0A	
L120		2253200096	RES,CHIP 1/10W	RC 0603 1/10W 0 ohm	J T
L121		2253200096	RES,CHIP 1/10W	RC 0603 1/10W 0 ohm	J T
L122		2253200096	RES,CHIP 1/10W	RC 0603 1/10W 0 ohm	J T
L123		2379560086	BEAD,HI-CURRENT	Z= 60ohm 1206 I>3.0A	
L127		2379812156	BEAD,HI-IMPEDANCE	Z= 120ohm(1MHZ~) 0805	300mA
L131		2379560086	BEAD,HI-CURRENT	Z= 60ohm 1206 I>3.0A	
L132		2379560086	BEAD,HI-CURRENT	Z= 60ohm 1206 I>3.0A	
P101		2404301107	CONNECTOR	JST PH 8P SIDE P=2.0 OR EQUAL	
P103		2404371007	CONNECTOR	JST PH 8P TOP P=2.0 OR EQUAL	
P104		2404301112	CONNECTOR	JST PH 13P SIDE P=2.0 OR EQUAL	
P105		2404222230	PIN PLUG	CH71302V1P3 P=2.0 30PIN CVILUX	
Q101	RA	2360301696	XISTOR,NPN R SMD	PMBS3904	PHILIPS SOT-23
Q101	RB	2360300896	XISTOR,NPN R SMD	MMBT3904	FAIRCHILD SOT-23
Q101	RC	2360301296	XISTOR,NPN R SMD	MMBT3904	DIODES SOT-23
Q102		2361211700	XISTOR,PNP A	KSB772 TO-126	FAIRCHILD
Q103	RA	2360301696	XISTOR,NPN R SMD	PMBS3904	PHILIPS SOT-23
Q103	RB	2360300896	XISTOR,NPN R SMD	MMBT3904	FAIRCHILD SOT-23
Q103	RC	2360301296	XISTOR,NPN R SMD	MMBT3904	DIODES SOT-23
Q104	RA	2360301696	XISTOR,NPN R SMD	PMBS3904	PHILIPS SOT-23
Q104	RB	2360300896	XISTOR,NPN R SMD	MMBT3904	FAIRCHILD SOT-23
Q104	RC	2360301296	XISTOR,NPN R SMD	MMBT3904	DIODES SOT-23
Q105	RA	2360100696	XISTOR,PNP R SMD	PMBS3906	PHILIPS SOT-23
Q105	RB	2360100596	XISTOR,PNP R SMD	MMBT3906	FAIRCHILD SOT-23
Q105	RC	2360100796	XISTOR,PNP R SMD	MMBT3906	DIODES SOT-23
Q106	RA	2360100696	XISTOR,PNP R SMD	PMBS3906	PHILIPS SOT-23
Q106	RB	2360100596	XISTOR,PNP R SMD	MMBT3906	FAIRCHILD SOT-23
Q106	RC	2360100796	XISTOR,PNP R SMD	MMBT3906	DIODES SOT-23
Q107	RA	2360100696	XISTOR,PNP R SMD	PMBS3906	PHILIPS SOT-23
Q107	RB	2360100596	XISTOR,PNP R SMD	MMBT3906	FAIRCHILD SOT-23

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
Q107	RC	2360100796	XISTOR,PNP R SMD	MMBT3906	DIODES SOT-23
Q108	RA	2360100696	XISTOR,PNP R SMD	PMBS3906	PHILIPS SOT-23
Q108	RB	2360100596	XISTOR,PNP R SMD	MMBT3906	FAIRCHILD SOT-23
Q108	RC	2360100796	XISTOR,PNP R SMD	MMBT3906	DIODES SOT-23
R102		2251215026	RES,CHIP 1/10	RC 0603 1/10W	15Kohm F
R104		2251215026	RES,CHIP 1/10	RC 0603 1/10W	15Kohm F
R106		2251215026	RES,CHIP 1/10	RC 0603 1/10W	15Kohm F
R110		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R111		2253210596	RES,CHIP 1/10W	RC 0603 1/10W	1Mohm J
R113		2253210396	RES,CHIP 1/10W	RC 0603 1/10W	10Kohm J
R115		2253233196	RES,CHIP 1/10W	RC 0603 1/10W	330 ohm J
R116		2253233196	RES,CHIP 1/10W	RC 0603 1/10W	330 ohm J
R117		2253233196	RES,CHIP 1/10W	RC 0603 1/10W	330 ohm J
R118		2253233196	RES,CHIP 1/10W	RC 0603 1/10W	330 ohm J
R119		2253222296	RES,CHIP 1/10W	RC 0603 1/10W	2.2Kohm J
R120		2253256196	RES,CHIP 1/10W	RC 0603 1/10W	560 ohm J
R121		2251224906	RES,CHIP 1/10	RC 0603 1/10W	249 ohm F
R122		2251210006	RES,CHIP 1/10	RC 0603 1/10W	100 ohm F
R123		2253233196	RES,CHIP 1/10W	RC 0603 1/10W	330 ohm J
R124		2253222096	RES,CHIP 1/10W	RC 0603 1/10W	22 ohm J
R125		2251210006	RES,CHIP 1/10	RC 0603 1/10W	100 ohm F
R127		2251210006	RES,CHIP 1/10	RC 0603 1/10W	100 ohm F
R128		2251275096	RES,CHIP 1/10	RC 0603 1/10W	75 ohm F
R129		2251275096	RES,CHIP 1/10	RC 0603 1/10W	75 ohm F
R130		2251275096	RES,CHIP 1/10	RC 0603 1/10W	75 ohm F
R131		2253233196	RES,CHIP 1/10W	RC 0603 1/10W	330 ohm J
R132		2253222096	RES,CHIP 1/10W	RC 0603 1/10W	22 ohm J
R134		2253247096	RES,CHIP 1/10W	RC 0603 1/10W	47 ohm J
R135		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R137		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R138		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R139		2253210396	RES,CHIP 1/10W	RC 0603 1/10W	10Kohm J
R140		2253210396	RES,CHIP 1/10W	RC 0603 1/10W	10Kohm J
R141		2253210396	RES,CHIP 1/10W	RC 0603 1/10W	10Kohm J
R142		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R147		2253222096	RES,CHIP 1/10W	RC 0603 1/10W	22 ohm J
R148		2253222096	RES,CHIP 1/10W	RC 0603 1/10W	22 ohm J
R149		2253222096	RES,CHIP 1/10W	RC 0603 1/10W	22 ohm J
R151		2253222096	RES,CHIP 1/10W	RC 0603 1/10W	22 ohm J
R155		2253210296	RES,CHIP 1/10W	RC 0603 1/10W	1Kohm J
R156		2253222296	RES,CHIP 1/10W	RC 0603 1/10W	2.2Kohm J
R157		2253247296	RES,CHIP 1/10W	RC 0603 1/10W	4.7Kohm J
R158		2253247296	RES,CHIP 1/10W	RC 0603 1/10W	4.7Kohm J
R159		2253247296	RES,CHIP 1/10W	RC 0603 1/10W	4.7Kohm J
R165		2253210396	RES,CHIP 1/10W	RC 0603 1/10W	10Kohm J
R167		2253210396	RES,CHIP 1/10W	RC 0603 1/10W	10Kohm J
R168		2253210496	RES,CHIP 1/10W	RC 0603 1/10W	100Kohm J
R169		2253210396	RES,CHIP 1/10W	RC 0603 1/10W	10Kohm J
R175		2253247296	RES,CHIP 1/10W	RC 0603 1/10W	4.7Kohm J
R176		2253247296	RES,CHIP 1/10W	RC 0603 1/10W	4.7Kohm J
R177		2253210296	RES,CHIP 1/10W	RC 0603 1/10W	1Kohm J
R178		2253233296	RES,CHIP 1/10W	RC 0603 1/10W	3.3Kohm J
R179		2253233296	RES,CHIP 1/10W	RC 0603 1/10W	3.3Kohm J
R181		2253210596	RES,CHIP 1/10W	RC 0603 1/10W	1Mohm J
R182		2253233296	RES,CHIP 1/10W	RC 0603 1/10W	3.3Kohm J
R183		2253233296	RES,CHIP 1/10W	RC 0603 1/10W	3.3Kohm J
R185		2253268196	RES,CHIP 1/10W	RC 0603 1/10W	680 ohm J
R186		2253268196	RES,CHIP 1/10W	RC 0603 1/10W	680 ohm J
R187		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R188		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R190		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R192		2253233296	RES,CHIP 1/10W	RC 0603 1/10W	3.3Kohm J
R193		2253233296	RES,CHIP 1/10W	RC 0603 1/10W	3.3Kohm J
R194		2253233296	RES,CHIP 1/10W	RC 0603 1/10W	3.3Kohm J
R195		2253233296	RES,CHIP 1/10W	RC 0603 1/10W	3.3Kohm J

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R196		2253233296	RES,CHIP 1/10W	RC 0603 1/10W	3.3Kohm J
R197		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R198		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R199		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R200		2253222296	RES,CHIP 1/10W	RC 0603 1/10W	2.2Kohm J
R201		2253300096	RES,CHIP 1/8	RC 0805 1/8 W	0ohm J
R202		2253300096	RES,CHIP 1/8	RC 0805 1/8 W	0ohm J
R204		2253300096	RES,CHIP 1/8	RC 0805 1/8 W	0ohm J
R210		2253210296	RES,CHIP 1/10W	RC 0603 1/10W	1Kohm J
R211		2253215296	RES,CHIP 1/10W	RC 0603 1/10W	1.5Kohm J
R212		2253210396	RES,CHIP 1/10W	RC 0603 1/10W	10Kohm J
R220		2253210296	RES,CHIP 1/10W	RC 0603 1/10W	1Kohm J
R242		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R244		2253222296	RES,CHIP 1/10W	RC 0603 1/10W	2.2Kohm J
R246		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R253		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R256		2235547813	RES,MTL 2	RS 2WS 0.47ohm	J P=15.0
RP01		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP02		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP03		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP04		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP05		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP06		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP07		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP08		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP09		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP10		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP11		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
RP12		2259222008	RES,CHIP NETWORKS	8P4R 1/16W 22ohm	J P=0.8
U001		2202512800	PCB MULTILAYER	178L66 MAIN FR4*4 132*100 1.00	
X101		2369104701	XTAL,OSC	27.000MHZ/49US	
X102		2369103601	XTAL,OSC	12.000MHZ/49US	

CON P.C.BOARD

D701		2363703891	LED	LED 3ø GRN/YEL	
P701		2427408183	WIRE HARNESS	8P H/B 1061#26+120C 180L P=2.0	
S701		2403702513	SWITCH,TACT	TSTA-2 4.3mm 160g HUA JIE	
S702		2403702513	SWITCH,TACT	TSTA-2 4.3mm 160g HUA JIE	
S703		2403702513	SWITCH,TACT	TSTA-2 4.3mm 160g HUA JIE	
S704		2403702513	SWITCH,TACT	TSTA-2 4.3mm 160g HUA JIE	
S705		2403702513	SWITCH,TACT	TSTA-2 4.3mm 160g HUA JIE	
U701		2202124900	PC BOARD	JT178I17 K/B CAM1 140*16	

POWER P.C.BOARD

C801		2300922401	CAP MTL MINI	X2 0.22u/275V P=15.0	M
C802	RA	2287547201	CAP,CER	CK45E 4700.000PF 500VA	M
C802	RB	2287147201	CAP,CER	CK45E 4700.000PF 250VA	M
C803	RA	2287547201	CAP,CER	CK45E 4700.000PF 500VA	M
C803	RB	2287147201	CAP,CER	CK45E 4700.000PF 250VA	M
C804		2349122396	CAP,CHIP 125'C	CS 1206/X7R/50V 0.022u	K
C805		2349110296	CAP,CHIP 125'C	CS 1206/X7R/50V 1000p	K
C806	RA	2270000005	CAP,SPE	B32529 MKT 0.01u/630V J P=5.0	
C806	RB	2303210391	CAP,MTL	CF93M 0.010UF 250V K	
C807		2349122396	CAP,CHIP 125'C	CS 1206/X7R/50V 0.022u	K
C808		2333410791	CAP,ELE 105'C	EC 100u/ 25V 6.3*11	P=5.0
C809		2285122191	CAP,CER	CC 220p/1KV/Y5P P=5.0	K
C810		2333622691	CAP,ELE 105'C	EC 22u/ 50V 5*11	P=5.0
C811		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C812		2357512708	EC HI-RIPPLE 105C	120uF/400V 18*36	P=7.5
C812		2357612708	EC HI-RIPPLE 105C	EC 120u/450V 20*34	P=7.5 (for INDIA)
C812		2357612708	EC HI-RIPPLE 105C	EC 120u/450V 20*34	P=7.5 (for Australia)
C813		2330005801	CAP,MINI ELE	EC 1500u/ 16V 10*20	P=5.0
C814		2301527291	CAP,MTL	CF93M 2700.000PF 100V	J

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
C815	RA	2330005501	CAP,MINI ELE	EC 220u/16V	6.3*11 P=2.5
C815	RB	2335322701	CAP,ELE Low Esr 105°C	EC 220u/ 16V	8*11.5 P=3.5
C816		2330005801	CAP,MINI ELE	EC 1500u/16V	10*20 P=5.0
C818		2272122191	CAP,CER	TC 220p/50V	CH P=5.0 J
C819		2344322396	CHIP CAP 125°C	CS 1206/COG/16V	0.022u J
C820		2349410496	CAP,CHIP 85°C	CS 1206/Y5V/50V	0.1u Z
C821		2330005801	CAP,MINI ELE	EC 1500u/16V	10*20 P=5.0
C822		2301522391	CAP,MTL	CF93M 0.022UF	100V J
C823		2287147201	CAP,CER	CK45E 4700.000PF	250VA M
C823	RA	2287547201	CAP,CER	CK45E 4700.000PF	500VA M
C824		2300922401	CAP,MTL MINI	X2 0.22u/275V	P=15.0 M
C826	RA	2335368711	CAP,ELE Low Esr 105°C	EC 680u/ 16V	8*16 P=3.5
C826	RB	2335368781	CAP,ELE Low Esr 105°C	EC 680u/ 16V	8*20 P=3.5
C828		2301522491	CAP,MTL	CF93M 0.220UF	100V J
C829	RA	2335368711	CAP,ELE Low Esr 105°C	EC 680u/ 16V	8*16 P=3.5
C829	RB	2335368781	CAP,ELE Low Esr 105°C	EC 680u/ 16V	8*20 P=3.5
C830	RA	2335368711	CAP,ELE Low Esr 105°C	EC 680u/ 16V	8*16 P=3.5
C830	RB	2335368781	CAP,ELE Low Esr 105°C	EC 680u/ 16V	8*20 P=3.5
C831		2333610591	CAP,ELE 105°C	EC 1u/ 50V	5*11 P=5.0
C832		2301547491	CAP,MTL	CF93M 0.470UF	100V J
C833	RA	2335368711	CAP,ELE Low Esr 105°C	EC 680u/ 16V	8*16 P=3.5
C833	RB	2335368781	CAP,ELE Low Esr 105°C	EC 680u/ 16V	8*20 P=3.5
C901		2335422751	CAP,ELE Low Esr 105°C	EC 220u/ 25V	8*12 P=3.5 (India & Australia none)
C902		2281410491	CAP,CER	CK45F 0.100UF	50V Z
C903		2301510591	CAP,MTL	CF93M 1.000UF	100V J
C904		2333610591	CAP,ELE 105°C	EC 1u/ 50V	5*11 P=5.0
C905		2281410491	CAP,CER	CK45F 0.100UF	50V Z
C906		2301547491	CAP,MTL	CF93M 0.470UF	100V J
C907		2349647596	CAP,CHIP	CS 1206/Y5V/16V	4.7u Z
C908		2301510391	CAP,MTL	CF93M 0.010UF	100V J
C909		2301515291	CAP,MTL	CF93M 1500.000PF	100V J
C910		2301547391	CAP,MTL	CF93M 0.047UF	100V J
C911		2301510391	CAP,MTL	CF93M 0.010UF	100V J
C912		2272122191	CAP,CER	TC 220p/50V	CH P=5.0 J
C913		2301547391	CAP,MTL	CF93M 0.047UF	100V J
C914		2301522591	CAP,MTL	CF93M 2.200UF	100V J
C915		2301522591	CAP,MTL	CF93M 2.200UF	100V J
C916		2281410491	CAP,CER	CK45F 0.100UF	50V Z
C917		2333422691	CAP,ELE 105°C	EC 22u/ 25V	5*11 P=5.0
C918		2335422751	CAP,ELE Low Esr 105°C	EC 220u/ 25V	8*12 P=3.5
C919		2275447001	CAP,CER	TC 47P/3KV	SL P=7.5 J
C920		2275447001	CAP,CER	TC 47P/3KV	SL P=7.5 J
C924		2275447001	CAP,CER	TC 47P/3KV	SL P=7.5 J
C925		2275447001	CAP,CER	TC 47P/3KV	SL P=7.5 J
C926		2281410491	CAP,CER	CK45F 0.100UF	50V Z
C927		2281410491	CAP,CER	CK45F 0.100UF	50V Z
C928		2275450901	CAP,CER	TC 5P/3KV	SL P=7.5 J
C929		2301582291	CAP,MTL	MEB 8200P/100V	J
C930		2275450901	CAP,CER	TC 5P/3KV	SL P=7.5 J
C931		2301582291	CAP,MTL	MEB 8200P/100V	J
C932		2349410496	CAP,CHIP 85°C	CS 1206/Y5V/50V	0.1u Z
C933		2349410496	CAP,CHIP 85°C	CS 1206/Y5V/50V	0.1u Z
D801		2363600195	DIODE,SWITCH	1N4148 DO-35	
D802	RA	2363223195	DIODE,RECT	UF4007	GS
D802	RB	2363231995	DIODE,RECT	UF4007	PEC
D803	RA	2363230895	DIODE,RECT	1H6G	WILLAS
D803	RB	2363601495	DIODE,SWITCH	1U5G 1A/600V	PEC
D804		2363300100	DIODE,SCHOTTKY	FCH30A15 30A/150V	NI
D805		2363221195	DIODE,RECT	PG208	PEC
D806		2363221495	DIODE,RECT	UF4005G	PEC.
D807		2363221195	DIODE,RECT	PG208	PEC
D808		2363504595	DIODE,ZENER	HZ7-A3 6.6V-6.9V 0.5W	HITACHI
D809		2363506395	DIODE,ZENER	HZ15-2 14.5-15.1V 0.5W	HITACHI
D810		2363221195	DIODE,RECT	PG208	PEC
D811	RA	2363230895	DIODE,RECT	1H6G	WILLAS

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
D811	RB	2363601495	DIODE,SWITCH	1U5G 1A/600V	PEC
D812		2363301206	DIODE,SCHOTTKY	SB560(F76) DO201AD	PEC
D813		2363221195	DIODE,RECT	PG208	PEC
D814	RA	2363501095	DIODE,ZENER	HZ6C-2 6.0-6.3V 0.5W	HITACHI
D814	RB	2363516295	DIODE,ZENER	BZX79C6V2 5.8-6.6V	PHILIPS
D814	RC	2363517495	DIODE,ZENER	TZX6V2C 6.0-6.3V	TELEFUNKEN
D904		2363600195	DIODE,SWITCH	1N4148 DO-35	
D905		2363600195	DIODE,SWITCH	1N4148 DO-35	
D906		2363600195	DIODE,SWITCH	1N4148 DO-35	
D907		2363600195	DIODE,SWITCH	1N4148 DO-35	
D908	RA	2363516995	DIODE,ZENER	MTZ5.6C 5.61-5.91V	ROHM
D908	RB	2363517195	DIODE,ZENER	TZX5V6E 5.6-5.9V	TELEFUNKEN
D908	RC	2363504195	DIODE,ZENER	RD5.6EB3 5.84V-5.88V 0.5W	
D910		2363600195	DIODE,SWITCH	1N4148 DO-35	
D911		2363600195	DIODE,SWITCH	1N4148 DO-35	
D912		2363600195	DIODE,SWITCH	1N4148 DO-35	
D913		2363600195	DIODE,SWITCH	1N4148 DO-35	
D914		2363600195	DIODE,SWITCH	1N4148 DO-35	
D915		2363600195	DIODE,SWITCH	1N4148 DO-35	
D916		2363600195	DIODE,SWITCH	1N4148 DO-35	
D917		2363600195	DIODE,SWITCH	1N4148 DO-35	
D918		2364202696	DIODE,RECT(SMD)	SS14 DO-214AC	PEC
D919	RA	2363516995	DIODE,ZENER	MTZ5.6C 5.61-5.91V	ROHM
D919	RB	2363517195	DIODE,ZENER	TZX5V6E 5.6-5.9V	TELEFUNKEN
D919	RC	2363504195	DIODE,ZENER	RD5.6EB3 5.84V-5.88V 0.5W	
D920	RA	2363510895	DIODE,ZENER	HZ9C-1 8.9-9.3V 0.5W	HITACHI
D920	RB	2363501195	DIODE,ZENER	MTZJ9.1B	
D920	RC	2363515595	DIODE,ZENER	BZX79C9V1 8.5-9.6V	PHILIPS
D920	RD	2363516595	DIODE,ZENER	TZX9V1C 8.9-9.3V	TELEFUNKEN
D921		2364202696	DIODE,RECT(SMD)	SS14 DO-214AC	PEC
D922		2364202696	DIODE,RECT(SMD)	SS14 DO-214AC	PEC
D923		2364202696	DIODE,RECT(SMD)	SS14 DO-214AC	PEC
F801	RA	2213125207	FUSE	FUSE 2.5A/250V 21502.5	LITTEL
F801	RB	2213125211	FUSE	FUSE 2.5A/250V SG501302.5	PICO
F804		2407200991	HOLDER,FUSE	CQ-05T (5mm DIA FUSE)	
I801		2365327800	IC,LINEAR	TEA1533AP SOT97-1	PHILIPS
I802	RA	2362401800	PHOTO COUPLR	TLP621(D4-GR-LF2)	TOSHIBA
I802	RB	2362401600	PHOTO COUPLR	TLP721F(D4-GR)	TOSHIBA
I803	RA	2365307391	IC,LINEAR	TL431CLP	MOTOROLA
I803	RB	2365327691	IC,LINEAR	CM431BCN	CHAMPION
I803	RC	2365328191	IC,LINEAR	AP431VA TO-92	ATC
I804		2365811296	IC,LINEAR(SMD)	L4973D5.1 SO20	ST
I901		2365329600	IC,LINEAR	OZ960D DIP-20P	MICRO
I902		2360700296	FET P&N-CH	AOP600 PDIP-8	AOS
I903		2360700296	FET P&N-CH	AOP600 PDIP-8	AOS
L802		2379101495	FERRITE CORE	3.5X9X0.8	
L803		2379101495	FERRITE CORE	3.5X9X0.8	
L804		2371154600	COIL,CHOKE	JD176 5.2UH 15.5T(REF)	
L805		2371121301	COIL,CHOKE	CHOKE 21mH 0.32mm*35Ts ET-20	
L806		2371107000	COIL,CHOKE	JC186H 28uH 29TS(REF) LAE	
L809		2379101595	FERRITE CORE	3.5X4.5X0.8	
L810		2379101495	FERRITE CORE	3.5X9X0.8	
L812		2371111101	COIL,CHOKE	115uH 0.1*50 45.5Ts I=5A 16*18	
L901		2374300400	XFORMER INVERTER	EEL-19 24/2400Ts 0.50/0.05mm	
L903		2374300400	XFORMER INVERTER	EEL-19 24/2400Ts 0.50/0.05mm	
L904		2371140401	COIL,CHOKE	300mH/300mH (0.05mm/410Ts)*2	
L905		2371140401	COIL,CHOKE	300mH/300mH (0.05mm/410Ts)*2	
P801		2407412800	SOCKET	AC INLET 0707-0001	INALWAYS
P802		2404301107	CONNECTOR	JST PH 8P SIDE P=2.0 OR EQUAL	
P901		2404380403	CONNECTOR	88227-032X 4.0mm	ACE
P906		2404380403	CONNECTOR	88227-032X 4.0mm	ACE
P982		2379102800	FERRITE CORE	17.5X12.7X9.5CORE W 1015#18Y/G	
Q801		2361610000	FET,N-CH	APO9N701-A TO-220CMF APEC	
Q802		2361301291	XISTOR,NPN R	2SC2120(Y)	TOSHIBA
Q803	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
Q803	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q803	RC	2361302591	XISTOR,NPN R	2SC945(P) TO-92	NEC
Q804	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q804	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q804	RC	2361302591	XISTOR,NPN R	2SC945(P) TO-92	NEC
Q901		2361609891	FET,N-CH	2N7000TA TO-92	FAIRCHILD
Q902		2361609891	FET,N-CH	2N7000TA TO-92	FAIRCHILD
Q903	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q903	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q903	RC	2361302591	XISTOR,NPN R	2SC945(P) TO-92	NEC
Q904	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q904	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q904	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q905		2361609891	FET,N-CH	2N7000TA TO-92	FAIRCHILD
Q906		2361609891	FET,N-CH	2N7000TA TO-92	FAIRCHILD
R801		2253447496	RES,CHIP 1/4	RC 1206 1/4 W	470Kohm J
R802		2235410406	RES,MTL 1	RS 1W 100Kohm J	P=7.0
R804		2235410406	RES,MTL 1	RS 1W 100Kohm J	P=7.0
R805		2253410996	RES,CHIP 1/4	RC 1206 1/4 W	1ohm J
R806		2253447196	RES,CHIP 1/4	RC 1206 1/4 W	470ohm J
R807		2253410096	RES,CHIP 1/4	RC 1206 1/4 W	10ohm J
R808		2251415006	RES,CHIP 1/4	RC 1206 1/4 W	150 ohm F
R809		2251491016	RES,CHIP 1/4	RC 1206 1/4 W	9.1Kohm F
R810		2241215816	RES,WIR 2	RW 2WS 0.15 ohm J	P=7.0
R811		2251491016	RES,CHIP 1/4	RC 1206 1/4 W	9.1Kohm F
R812		2251424316	RES,CHIP 1/4	RC 1206 1/4 W	2.43Kohm F
R813		2253410196	RES,CHIP 1/4	RC 1206 1/4 W	100ohm J
R814		2251433026	RES,CHIP 1/4	RC 1206 1/4 W	33Kohm F
R815		2233412195	RES,CBN 1/4 S	RD 1/4WS 120.00	J
R816		2251410026	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm F
R817		2253447296	RES,CHIP 1/4	RC 1206 1/4 W	4.7Kohm J
R818		2253468396	RES,CHIP 1/4	RC 1206 1/4 W	68Kohm J
R819		2253447296	RES,CHIP 1/4	RC 1206 1/4 W	4.7Kohm J
R820		2253447396	RES,CHIP 1/4	RC 1206 1/4 W	47Kohm J
R821		2251439026	RES,CHIP 1/4	RC 1206 1/4 W	39Kohm F
R822		2251420036	RES,CHIP 1/4	RC 1206 1/4 W	200Kohm F
R823		2253410296	RES,CHIP 1/4	RC 1206 1/4 W	1Kohm J
R824		2251420026	RES,CHIP 1/4	RC 1206 1/4 W	20Kohm F
R826		2253412396	RES,CHIP 1/4	RC 1206 1/4 W	12Kohm J
R833		2253447496	RES,CHIP 1/4	RC 1206 1/4 W	470Kohm J
R840		2229201212	THERMISTOR,PTH	SCK-103 10+-20% 3A THINKING	
R865		2251410026	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm F
R901		2253415096	RES,CHIP 1/4	RC 1206 1/4 W	15ohm J
R902		2251439026	RES,CHIP 1/4	RC 1206 1/4 W	39Kohm F
R903		2251451126	RES,CHIP 1/4	RC 1206 1/4 W	51.1Kohm F
R904		2251447026	RES,CHIP 1/4	RC 1206 1/4 W	47Kohm F
R905		2253410396	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm J
R907		2253427396	RES,CHIP 1/4	RC 1/4W 27.00K	J T3216
R908		2251462026	RES,CHIP 1/4	RC 1206 1/4 W	62Kohm F
R909		2253410396	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm J
R912		2251449906	RES,CHIP 1/4	RC 1206 1/4 W	499 ohm F
R913		2239227005	RES,PRE 1/4 S	RN 1/4WS 270 ohm	F
R913		2239233005	RES,PRE 1/4 S	RN 1/4WS 330 ohm	F
R913		2239233005	RES,PRE 1/4 S	RN 1/4WS 330 ohm	F
R914		2253410596	RES,CHIP 1/4	RC 1/4W 1.00M	J T3216
R915		2253410396	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm J
R916		2253439496	RES,CHIP 1/4	RC 1/4W 390.00K	J T3216
R917		2251449906	RES,CHIP 1/4	RC 1206 1/4 W	499 ohm F
R918		2251427006	RES,CHIP 1/4	RC 1206 1/4 W	270 ohm F
R919		2253451396	RES,CHIP 1/4	RC 1/4W 51.00K	J T3216
R920		2253410396	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm J
R921		2253410596	RES,CHIP 1/4	RC 1/4W 1.00M	J T3216
R922		2253410596	RES,CHIP 1/4	RC 1/4W 1.00M	J T3216
R923		2253439396	RES,CHIP 1/4	RC 1206 1/4 W	39Kohm J
R925		2233447995	RES,CBN 1/4 S	RD 1/4WS 4.70	J

(for INDIA)
(for Australia)

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R926		2233447995	RES,CBN 1/4 S	RD 1/4WS 4.70 J	
R927		2233410495	RES,CBN 1/4 S	RD 1/4WS 100.00K J	
R930		2233447995	RES,CBN 1/4 S	RD 1/4WS 4.70 J	
R931		2253447996	RES,CHIP 1/4	RC 1206 1/4 W 4.7ohm J	
R931		2239227005	RES,PRE 1/4 S	RN 1/4WS270 ohm F	(for INDIA)
R931		2239227005	RES,PRE 1/4 S	RN 1/4WS270 ohm F	(for Australia)
R932		2253410396	RES,CHIP 1/4	RC 1206 1/4 W 10Kohm J	
R933		2253410496	RES,CHIP 1/4	RC 1206 1/4 W 100Kohm J	
R934		2253422496	RES,CHIP 1/4	RC 1206 1/4 W 220Kohm J	
T801		2374226002	XFORMER,POWR	PQ2620 250uH	
U801		2202126100	PC BOARD	JT178L17 P/B CAM1 199*170	

OTHERS

P951		2427130047	POWER CORD	GERMAN WALL 1.83M BLACK	(EUROPE)
P951		2427130110	POWER CORD	KOREA WALL 1.83M BLACK	(KOREA)
P951		2427130101	POWER CORD	UK WALL 1.83M BLACK	(UK)
P951		2427130046	POWER CORD	USA WALL 1.8M BLACK	(USA)
P951		2427130094	POWER CORD	AUSTRALIA WALL 1.83M BLACK	(AUSTRALIA)
P951		2427130058	POWER CORD	JAPAN WALL TYPE 1.83M BLK	(JAPAN)
P951		2427130105	POWER CORD	RUSSIA WALL 1.83M BLACK	(RUSSIA)
P951		2427130112	POWER CORD	INDIA WALL 1.83M BLACK	(INDIA)
P953		2427412695	WIRE HARNESS	8P H/H 1007#24 100L P=2.0	
P961		2427501164	I/O CABLE	D15/C13 2919(3+6) 1.83M BLK	
P981		2427412661	WIRE HARNESS	30P JAE FI/15*2P 2725#28 80L	
P983		2427307061	LUG W/WIRE	ø4.3*2 1007#18 BLACK L=60mm	
P985		2427307062	LUG W/WIRE	ø4.3/3.2 1007#18 BLK L=60mm	
V901		2212003610	LCD PANEL	CLAA170EA02VG CPT	