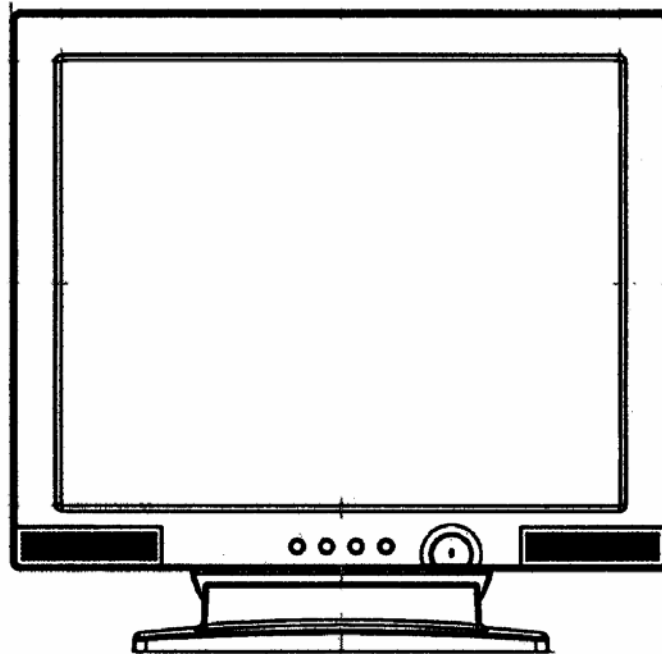


Service Manual



Model: Belinea 101705

Art. No. 111723

MAXDATA Systeme GmbH

Elbestr. 12-16

45768 Marl / Germany

Belinea 101705 (111723) Service Manual

TABLE OF CONTENTS

	PAGE
1. PRECAUTION AND NOTICES -----	1
1.1. SAFETY PRECAUTIONS -----	1
1.2. PRODUCT SAFETY NOTICE-----	1
1.3. SERVICE NOTES-----	1
2. SERVICE TOOL & EQUIPMENT REQUIRED -----	2
3. SPECIFICATIONS -----	2~3
3.1. PRODUCT SPECIFICATIONS-----	2
3.2. FACTORY SUPPORTING MODES-----	3
3.3. D-SUB CONNECTOR -----	3
4. EXPLODED VIEW AND PARTS LIST -----	4~5
4.1. EXPLODED VIEW-----	4
4.2. EXPLODED VIEW PARTS LIST-----	5
5. BLOCK DIAGRAM -----	6
6. SCHEMATIC DIAGRAM -----	7~14
6.1. Power -----	7
6.2. Input-----	8
6.3. Scaler-----	9
6.4. Panel Interface-----	10
6.5. MCU-----	11
6.6. Audio -----	12
6.7. Inverter-----	13
6.8. A/D power -----	14
7. WORKING THEOREM -----	15~17
8. WIRING DIAGRAM -----	18
9. PCB LAYOUT -----	19~22
9.1. MAIN PCB TOP VIEW -----	19
9.2. MAIN PCB BOTTOM VIEW-----	20
9.3. CON & POWER PCB TOP VIEW-----	21
9.4. CON & POWER PCB BOTTOM VIEW -----	22
10. TROUBLE SHOOTING FLOW CHART -----	23~25
10.1. NO POWER -----	23
10.2. NO DISPLAY-----	24
10.3. NO SOUND -----	25
11. ADJUSTMENT -----	26~27
11.1. ADJUSTMENT CONDITIONS AND PRECAUTIONS-----	26
11.2. MAIN ADJUSTMENTS -----	26
11.3. ALIGNMENT PROCEDURES-----	26
12. ELECTRICAL PARTS LIST -----	28~35

Belinea 101705 (111723) Service Manual

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.

Belinea 101705 (111723) Service Manual

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	16,2mio Color (FRC)
Viewing Angle	CR ≥ 10 Horizontal: 140 deg (typ.) Vertical: 130 deg (typ.)
Contrast Ratio	450 : 1 (typ.) / 360 : 1(min.)
Brightness	300 cd/ m ² (typ.) 260 cd/m ² (min.)
Response Time	Tr: 9 ms Tf: 16ms (typ.) Tr: 16 ms Tf: 32 ms (max.)
Active Display Area	337.9mm(H)× 270.3mm(V)
Temperature	Operating: 0°C ~ +40°C Storage: -20°C ~ +60°C
Compliance	UL, CUL, TÜV, CE, FCC, VCCI, BSMI, CCC, Energy Star.
Power	Input Voltage: 100~240 Vac Consumption: 45 Watts (Max.)
Audio	1Watt(L) + 1Watt(R)

Belinea 101705 (111723) Service Manual

3.2. FACTORY SUPPORTING MODES

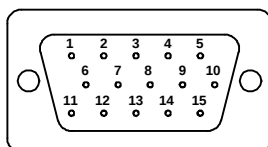
Primary Preset: VESA 1280 x 1024 @ 60Hz

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

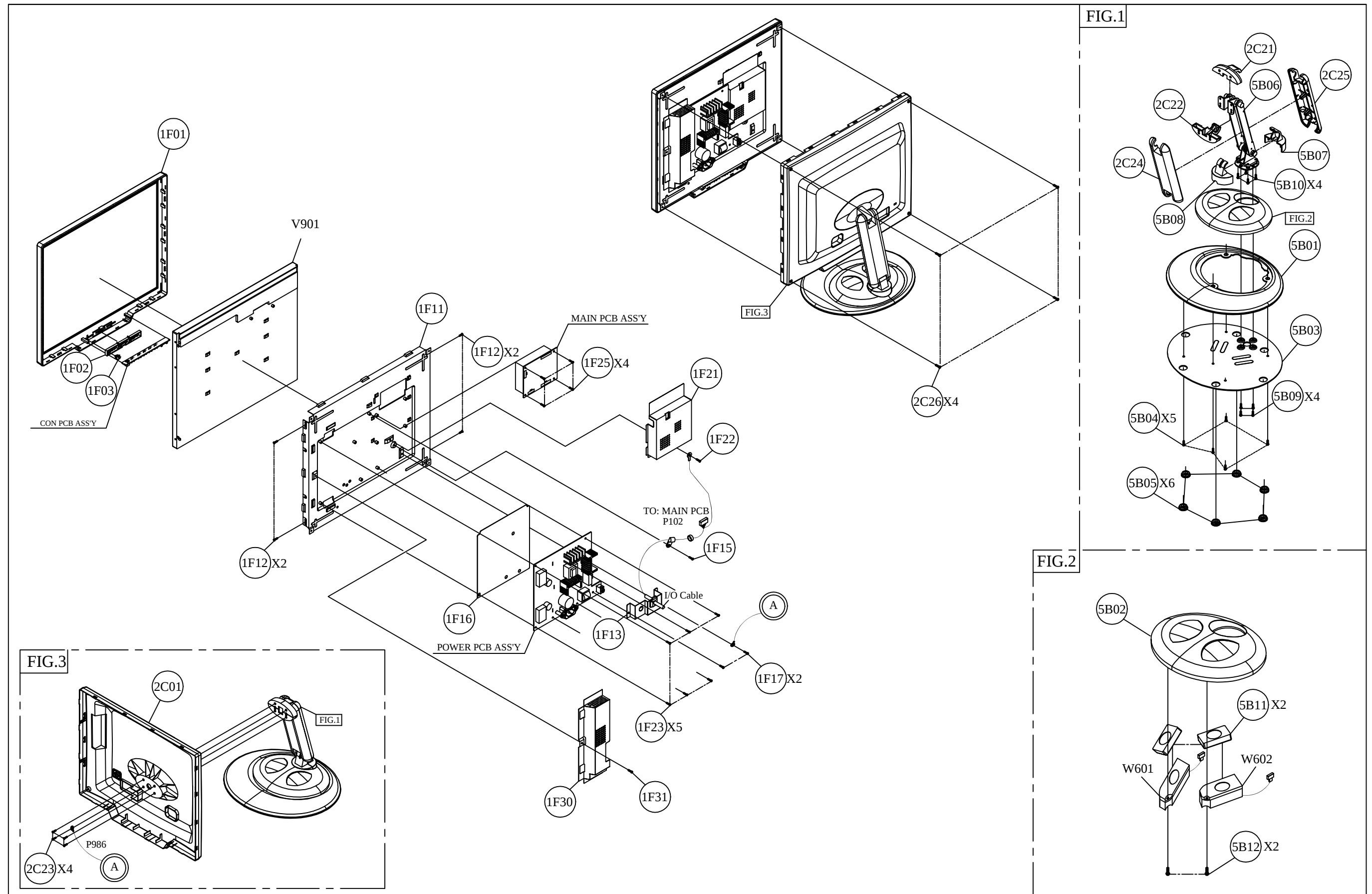


1.R	6.GND	11.NC
2.G	7.GND	12.SDA
3.B	8.GND	13.H.SYNC
4.NC	9. +5V	14.V.SYNC
5.GND	10.GND	15.SCL

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

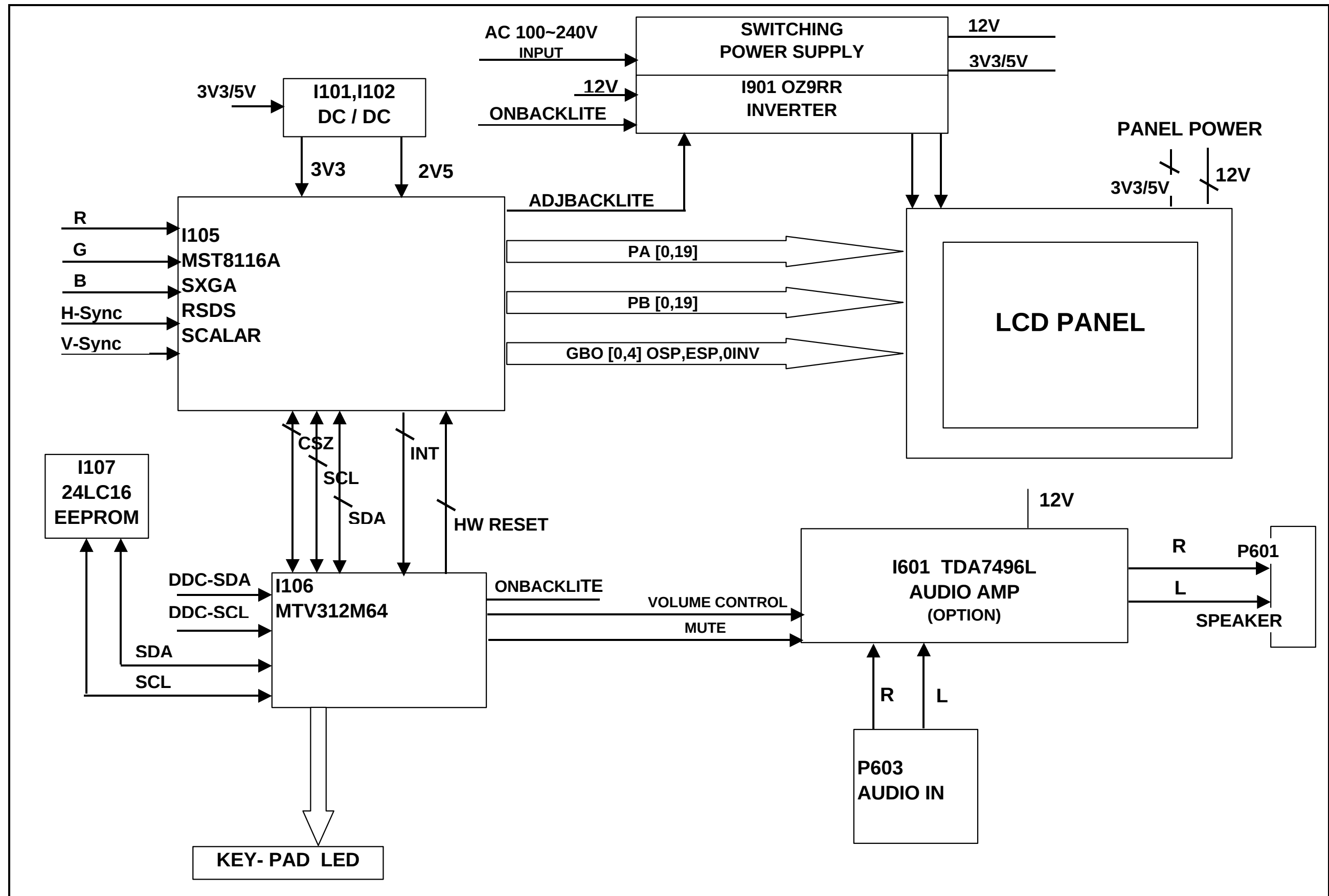


Belinea 101705 (111723) Service Manual

4.2. EXPLODED VIEW PARTS LIST

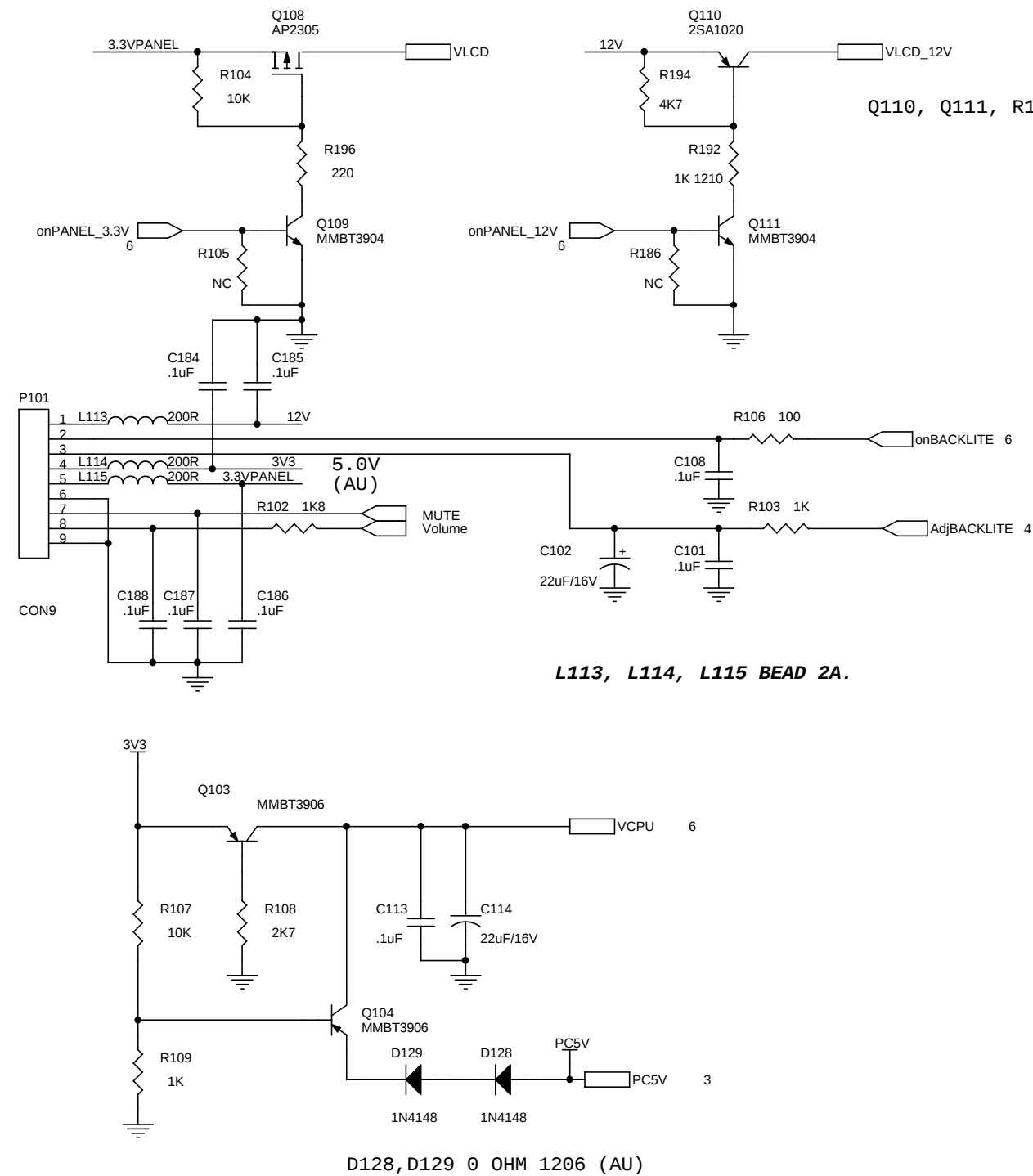
Ref. No.	Source	Part No.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1F01		2024264203	FRONT BEZEL	BAYER PC+ABS FR2000 7035	1	
1F02		2044263905	FUNCTION KEY	PC+ABS BAYER FR2000 877U	1	
1F03		2053752901	LED INDIC.-PWR	JT166K/JT178K-PMMA 94HB	1	
1F11		2071970700	METAL FITTG	JT178K /SECC T=0.8 PANEL V-8	1	
1F12		2080002200	SCREW,SPE	L355 M3x6 DH NICKEL-PLATED	4	
1F13		2071966200	METAL FITTG	JT178K77 SECC T=1.0MM(I/O)	1	
1F15		2080003700	SCREW,SPE	1SZZTER001A M3*6L MSWR17/FZMY1	1	
1F16		2072458000	INSULATOR	MYLAR BLACK 94V0 T=0.5MM	1	
1F17		2082630062	SCREW	M3X6 P=0.5	2	
1F21		2071668600	SHIELD PLATE	JT178L/K SPTE T=0.3 MAIN BOARD	1	
1F22		2082630062	SCREW	M3X6 P=0.5	1	
1F23		2082630062	SCREW	M3X6 P=0.5	5	
1F25		2080003700	SCREW,SPE	1SZZTER001A M3*6L MSWR17/FZMY1	4	
1F30		2071669000	SHIELD PLATE	JT178L/K SPTE T=0.3 INVERTER	1	
1F31		2082630062	SCREW	M3X6 P=0.5	1	
2C01		2022260903	CABI BACK	BAYER PC+ABS FR2000 7035	1	
2C21		2027257004	DUST COVER	BAYER PC+ABS FR2000 7035	1	
2C22		2027257104	DUST COVER	BAYER PC+ABS FR2000 7035	1	
2C23		2085740122	SCREW,B OTW+	SCREW B OTW+ M4X12	4	
2C24		2028552503	NECK	BAYER PC+ABS FR2000 7035	1	
2C25		2028552603	NECK	BAYER PC+ABS FR2000 7035	1	
2C26		2082630062	SCREW	M3X6 P=0.5	4	
5B01		2028256503	STAND	BAYER PC+ABS FR2000 7035	1	
5B02		2028256404	STAND	BAYER PC+ABS FR2000 7035	1	
5B03		2071863500	BRACKET, FIX	JT178K77 SECC T=2.0MM	1	
5B04		2083740082	SCREW,BND T+	M4*8(BND T+)	5	
5B05		2039802301	FOOT PAD	CR 420x φ 16.5x5.8	6	
5B06		2106655300	HINGE	JT178KP TRIPLE PIVOT ROTATE	1	
5B07		2027257204	DUST COVER	BAYER PC+ABS FR2000 7035	1	
5B08		2027257304	DUST COVER	BAYER PC+ABS FR2000 7035	1	
5B09		2087340066	SCREW,B SPW+	SCREW, B SPW+	4	
5B10		2084730082	SCREW,BND T+	M3X8(BND T+)	4	
5B11		2061252400	SPONGE	36X23X3t EVA	2	
5B12		2084730082	SCREW,BND T+	M3X8(BND T+)	2	
5B13		2074160900	HOLDER	JP166K NYLON 66 UL94-V2	2	

5. BLOCK DIAGRAM



6. SCHEMATIC DIAGRAM

6.1. Power

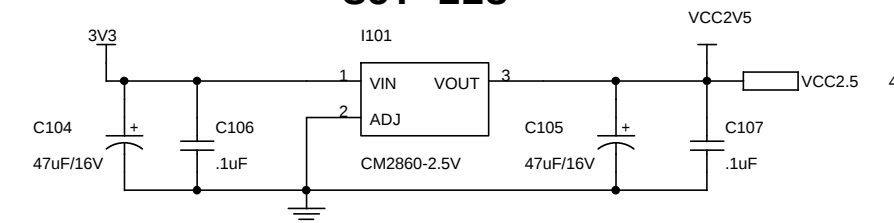


L113, L114, L115 BEAD 2A.

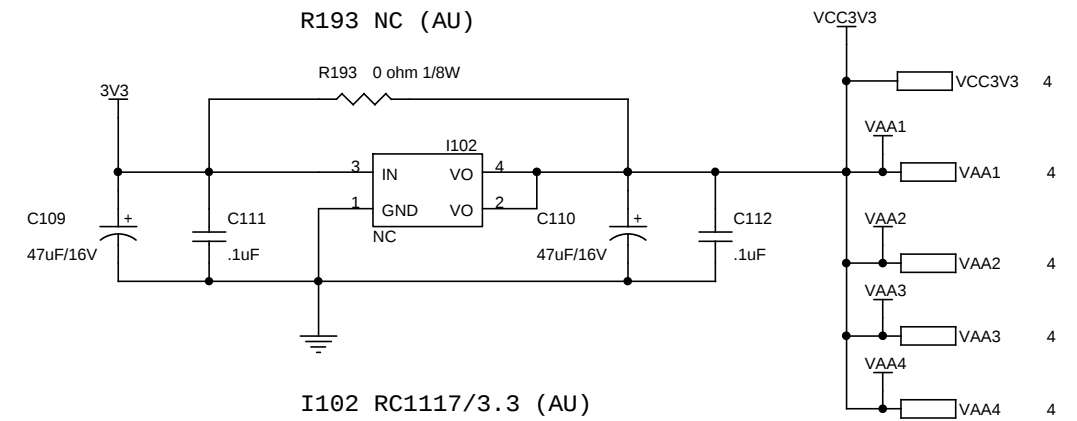
D128, D129 0 OHM 1206 (AU)

Q110, Q111, R194, R192, R186 NC (AU)

SOT-223

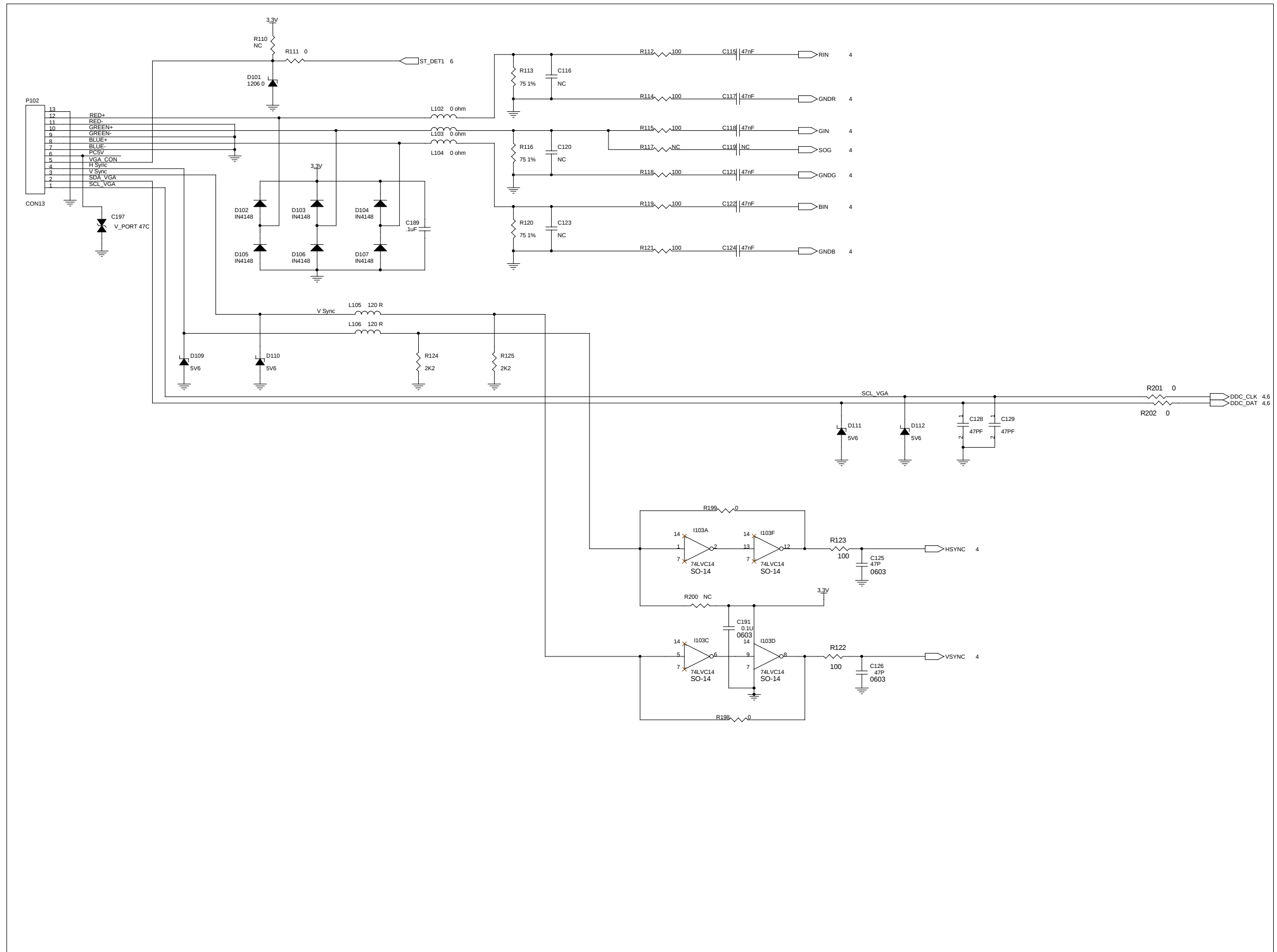


R193 NC (AU)



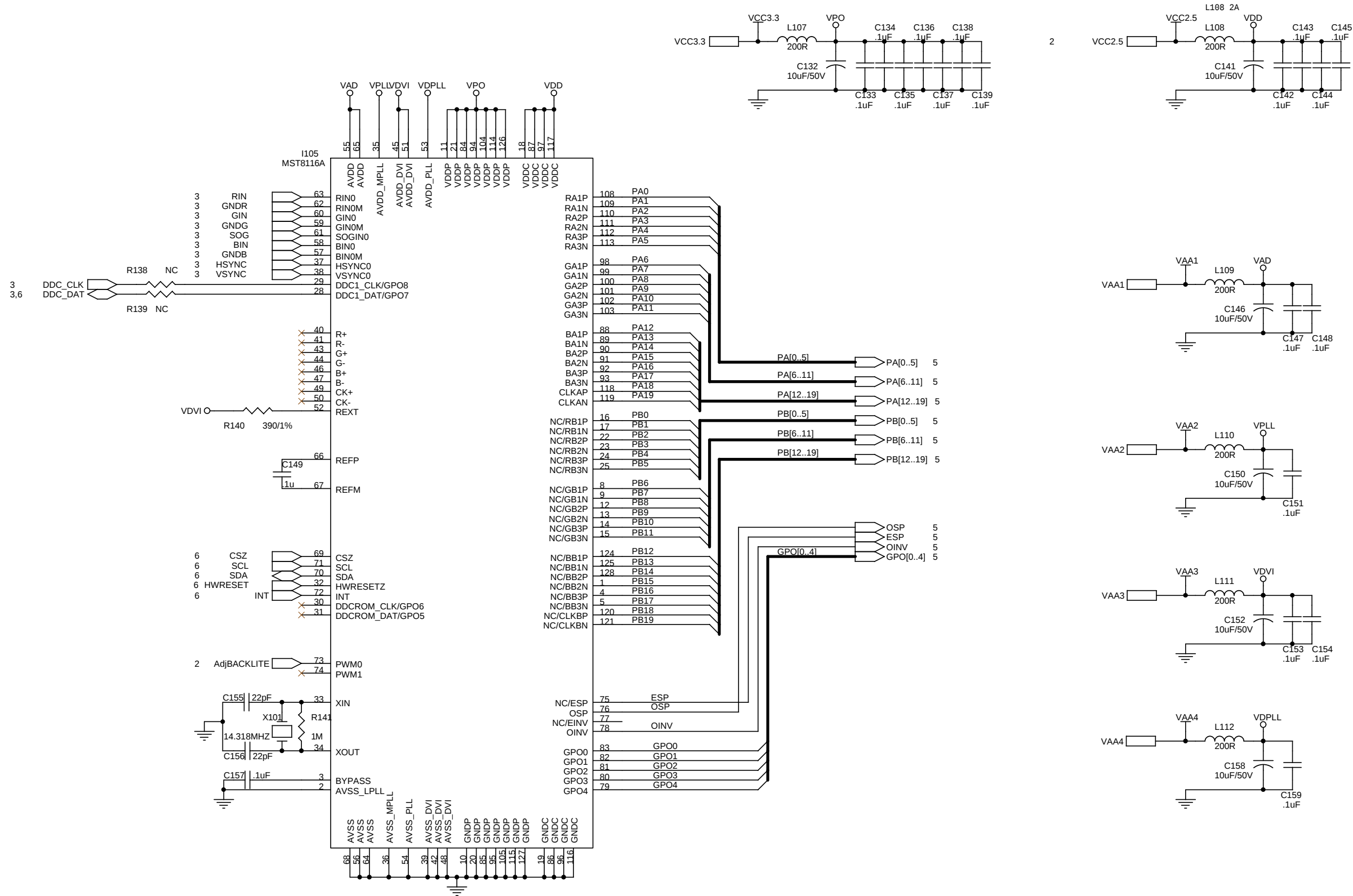
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6.2. Input



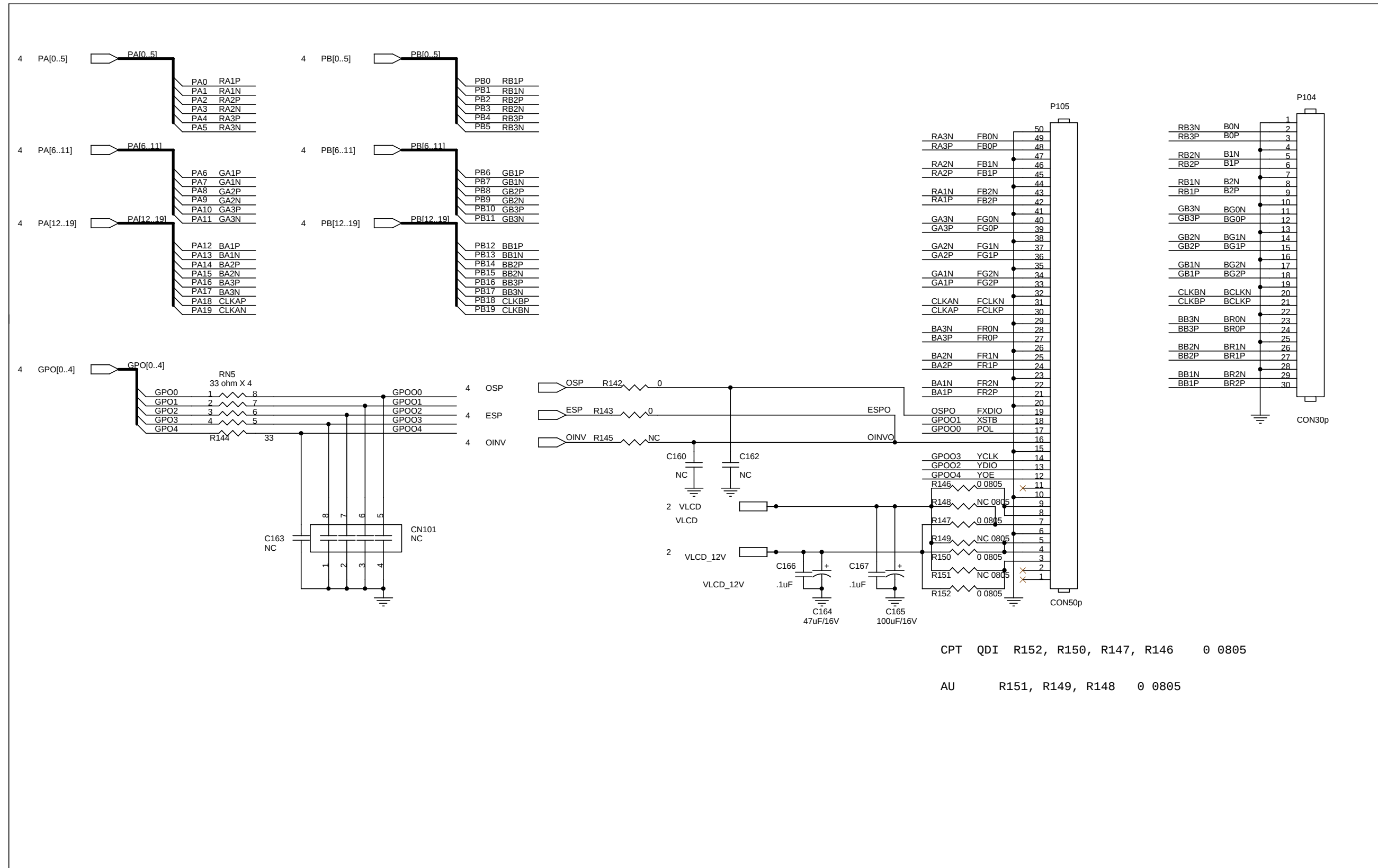
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6.3. Scaler



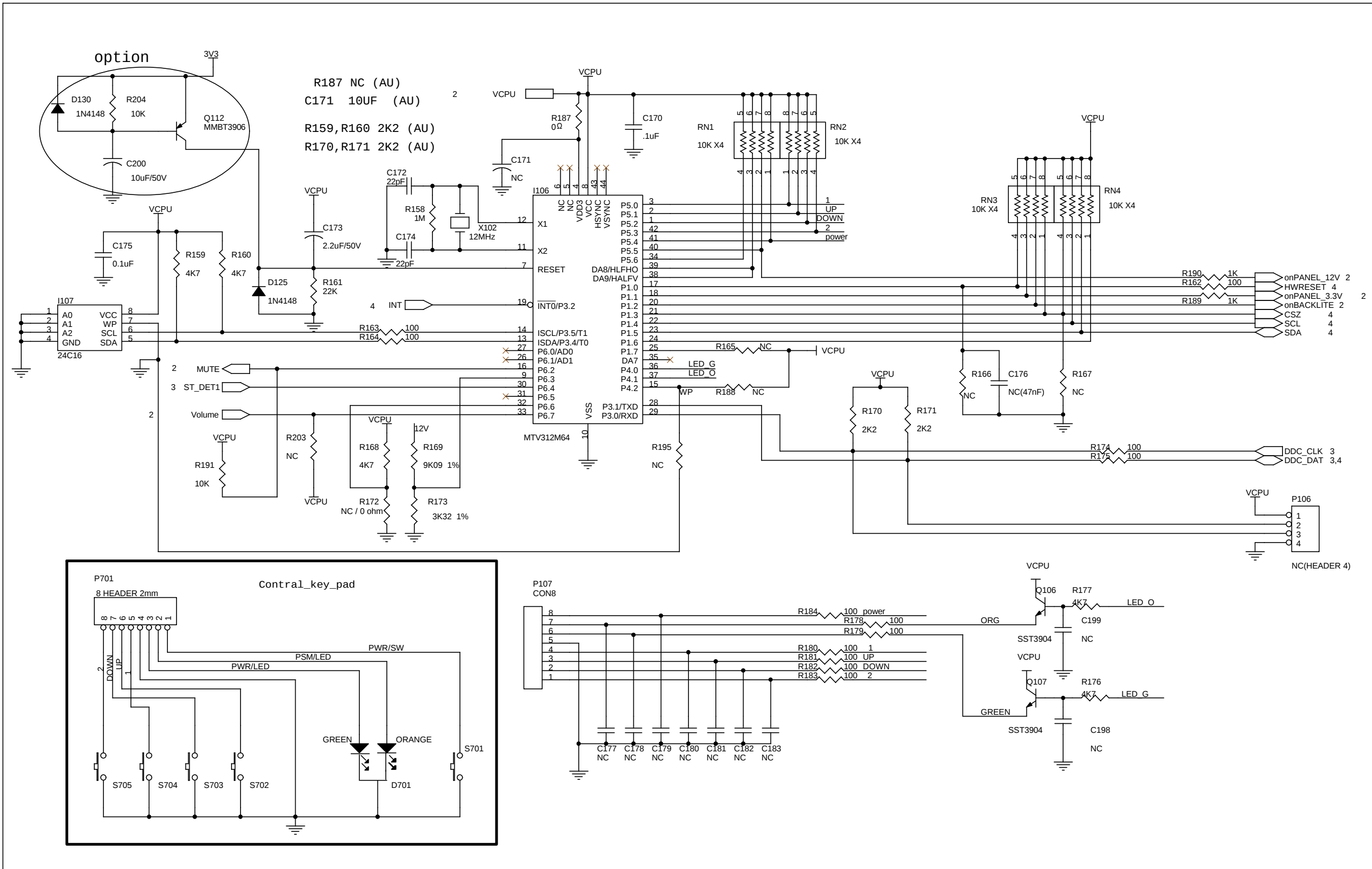
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6.4. Panel Interface



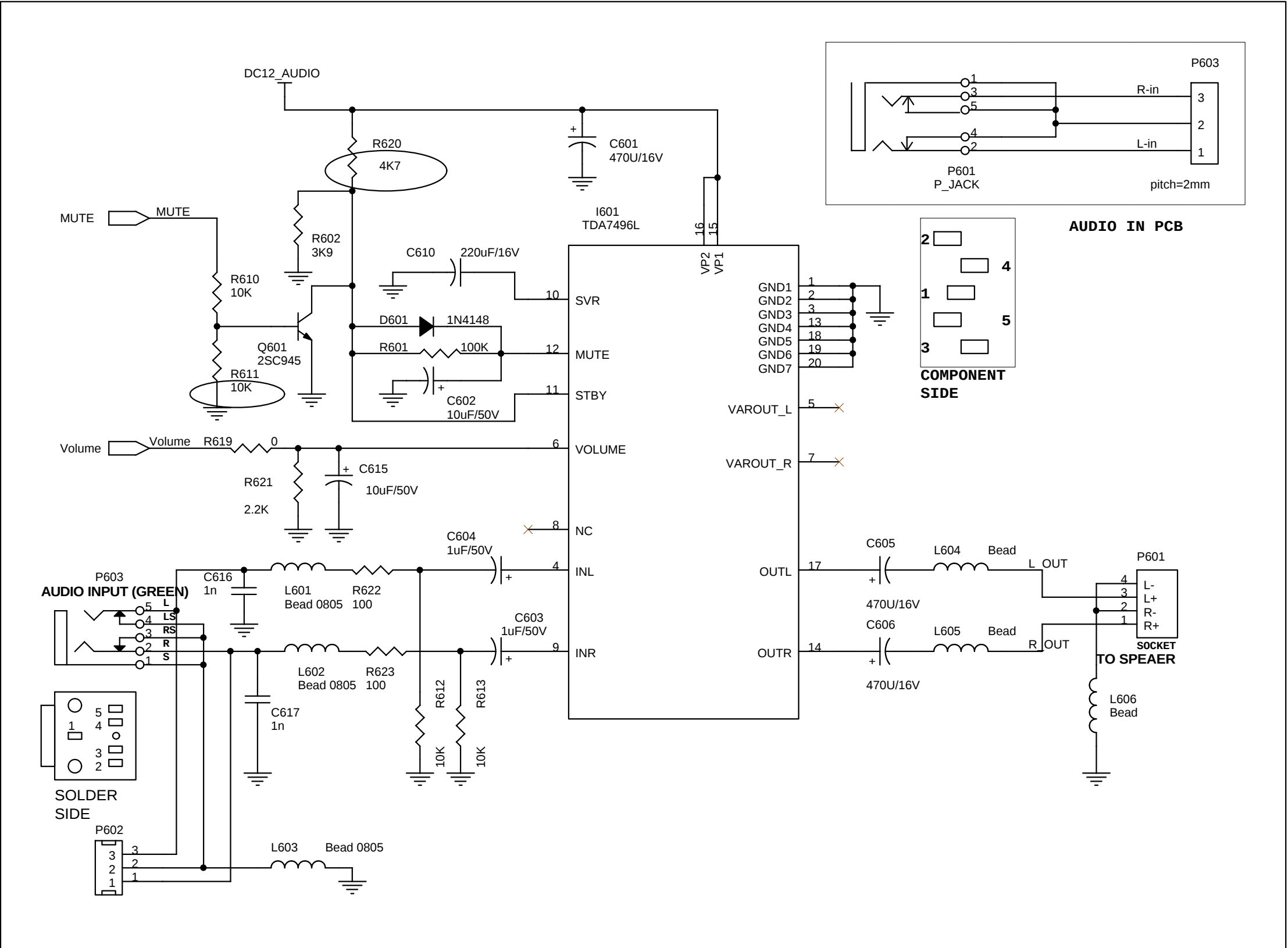
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6.5. MCU



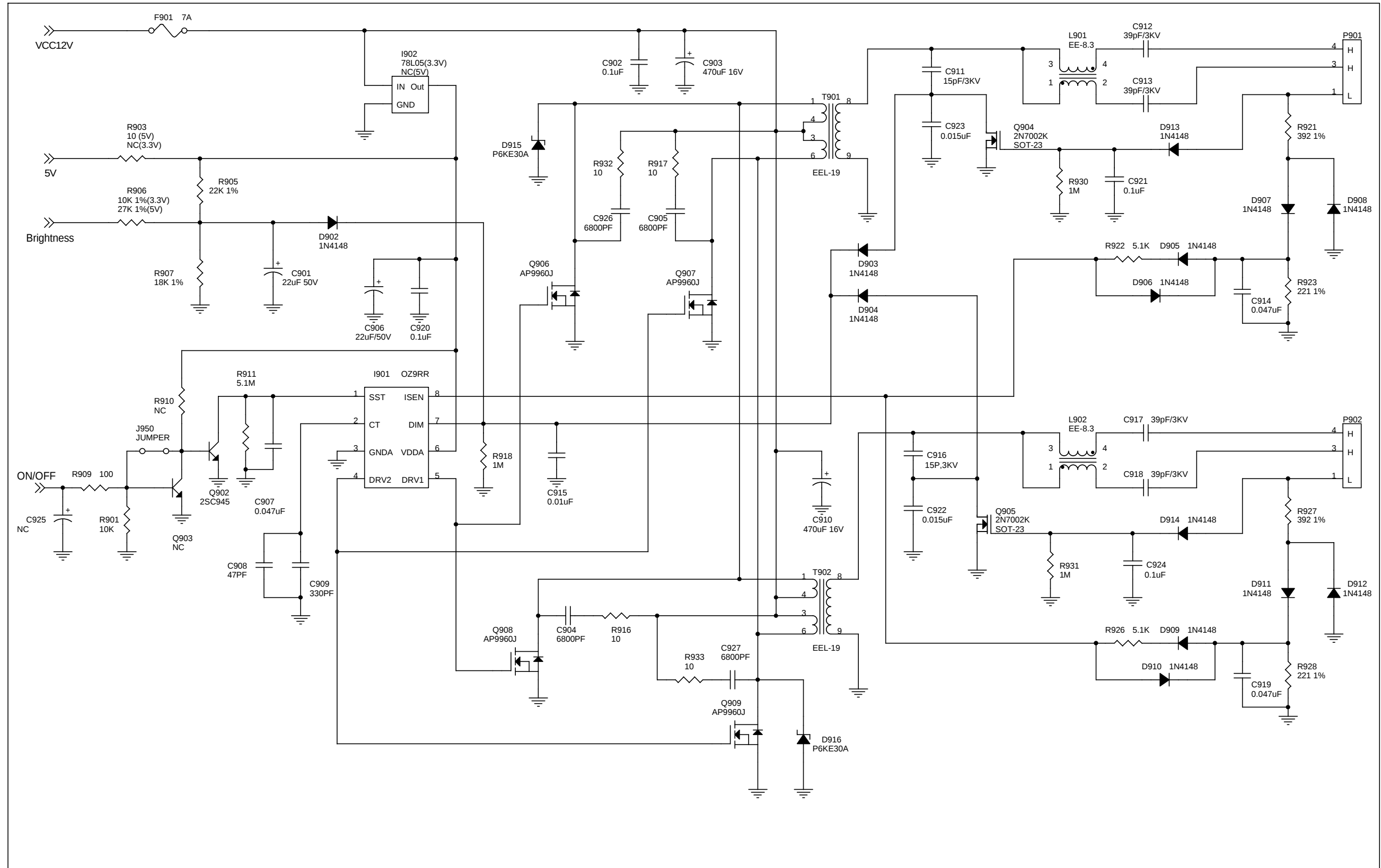
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6.6. Audio



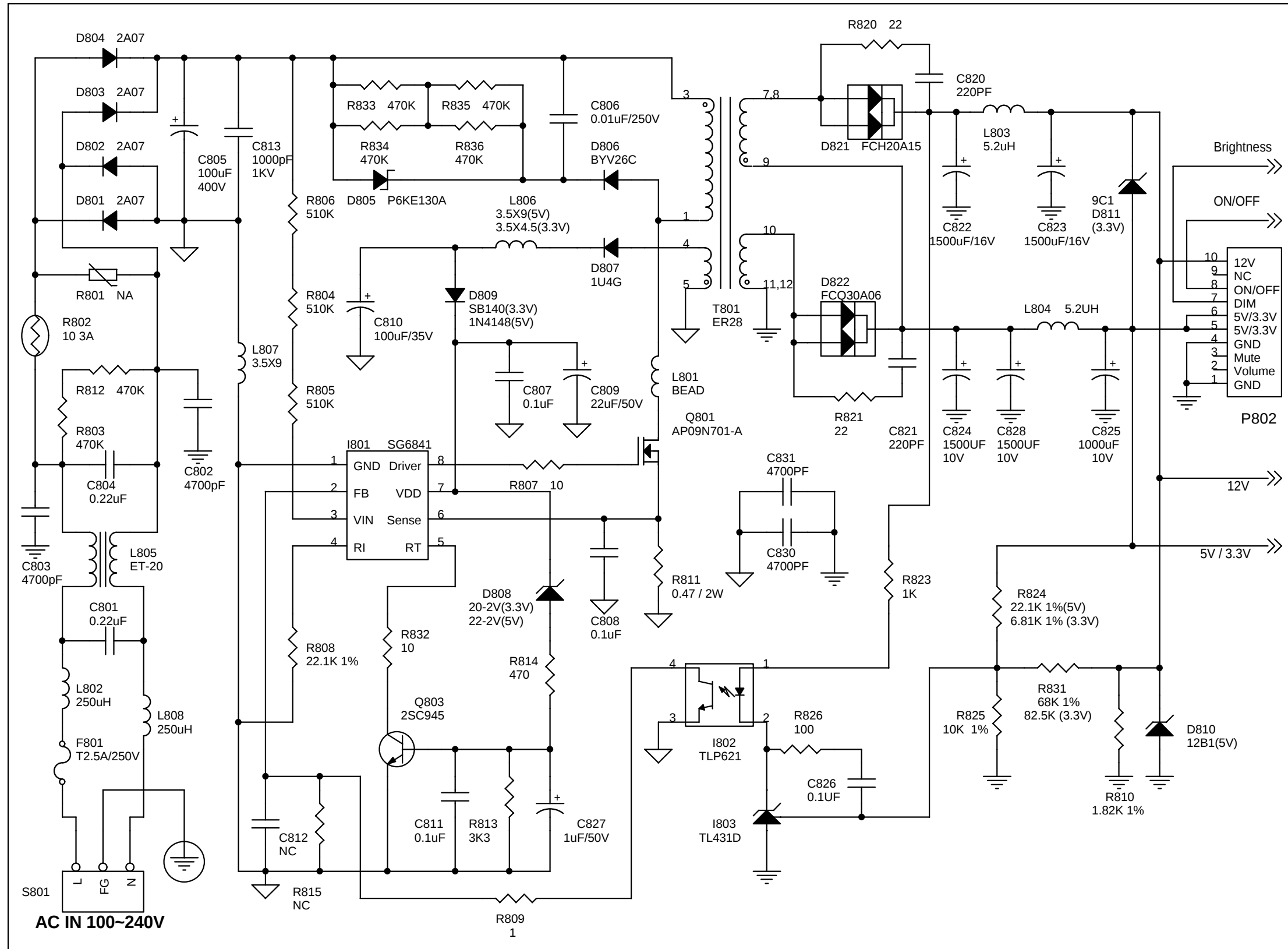
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6.7. Inverter



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6.8. A/D power



Belinea 101705 (111723) Service Manual

7. WORKING THEOREM

A. 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 convert the input signal ranging from VGA to SXGA into SXGA resolution that panel can acknowledge.

GENERAL DESCRIPTION

The MST8116A is a high performance, and fully integrated graphics processing IC solution for LCD monitors with resolutions up to SXGA. It is configured with an integrated triple-ADC/PLL, a high quality scaling engine, an on-screen display controller, a built-in output clock generator, a panel timing controller (TCON), and RSDS display interface. To further reduce system costs, the MST8116A also integrates intelligent power management control capability for green-mode requirements and spread-spectrum support for EMI management.

PIN DESCRIPTION

CPU Interface

Pin Name Pin Type Function Pin

HWRESET Schmitt Trigger Input
w/ 5V-tolerant Hardware reset; active high 32
CS Input w/ 5V-tolerant 3 Wire Serial Bus Chip Select; active high 69
SDA I/O w/ 5V-tolerant 3 Wire Serial Bus Data; 4mA driving strength 70
SCL Input w/ 5V-tolerant 3 Wire Serial Bus Clock 71
INT Output CPU interrupt; 4mA driving strength 72

Analog Interface

Pin Name Pin Type Function Pin

HSYNCO Schmitt Trigger Input
w/ 5V-tolerant Analog HSYNC input 37
VSYNCO Schmitt Trigger Input
w/ 5V-tolerant Analog VSYNC input 38
REFP Internal ADC top de-coupling pin 66
REFM Internal ADC bottom de-coupling pin 67
RINO Analog Input Analog red input 63
RINOM Analog Input Reference ground for analog red input 62
SOGINO Analog Input Sync-on-green input 61
GINO Analog Input Analog green input 60
GINOM Analog Input Reference ground for analog green input 59
BINO Analog Input Analog blue input 58
BINOM Analog Input Reference ground for analog blue input 57
REXT External resistor 390 ohm to AVDD 52

RSDS Interface

Pin Name Pin Type Function Pin

CLKAP Output A-Link Positive RSDS Differential Clock Output from "Odd" Channel 118
CLKAN Output A-Link Negative RSDS Differential Clock Output from "Odd" Channel 119
CLKBP Output B-Link Positive RSDS Differential Clock Output from "Even" Channel 120
CLKBN Output B-Link Negative RSDS Differential Clock Output from "Even" Channel 121
BA[3:1]P Output A-Link Positive RSDS Differential Data Output from "Odd" Channel 92, 90, 88
BA[3:1]N Output A-Link Negative RSDS Differential Data Output from "Odd" Channel 93, 91, 89
GA[3:1]P Output A-Link Positive RSDS Differential Data Output from "Odd" Channel 102, 100, 98
GA[3:1]N Output A-Link Negative RSDS Differential Data Output from "Odd" Channel 103, 101, 99
RA[3:1]P Output A-Link Positive RSDS Differential Data Output from "Odd" Channel 112, 110, 108
RA[3:1]N Output A-Link Negative RSDS Differential Data Output from "Odd" Channel 113, 111, 109
BB[3:1]P Output B-Link Positive RSDS Differential Data Output from "Even" Channel 4, 128, 124
BB[3:1]N Output B-Link Negative RSDS Differential Data Output from "Even" Channel 5, 1, 125
GB[3:1]P Output B-Link Positive RSDS Differential Data Output from "Even" Channel 14, 12, 8
GB[3:1]N Output B-Link Negative RSDS Differential Data Output from "Even" Channel 15, 13, 9
RB[3:1]P Output B-Link Positive RSDS Differential Data Output from "Even" Channel 24, 22, 16
RB[3:1]N Output B-Link Negative RSDS Differential Data Output from "Even" Channel 25, 23, 17
GPO[8:5] Output TCON GPO[8:5]; 4mA driving strength 29, 28, 30, 31
GPO[4:0] Output w/ Pull-down TCON GPO[4:0]; 4~12mA driving strength programmable 79-83
OINV Output w/ Pull-down Resistor TCON "Odd" Channel Inversion; 4~12mA driving strength programmable 78

Belinea 101705 (111723) Service Manual

EINV Output w/ Pull-down Resistor TCON “Even” Channel Inversion; 4~12mA driving strength programmable 77
OSP Output w/ Pull-down Resistor TCON “Odd” Channel Start Pulse; 4~12mA driving strength programmable 76
ESP Output w/ Pull-down Resistor TCON “Even” Channel Start Pulse; 4~12mA driving strength programmable 75

GPIO Interface

Pin Name Pin Type Function Pin

GOUT1/PWM1 Output GOUT1/PWM1; 4mA driving strength 74

GOUT0/PWM0 Output GOUT0/PWM0; 4mA driving strength 73

Misc. Interface

Pin Name Pin Type Function Pin

BYPASS For External Bypass Capacitor 3

XIN Crystal Oscillator Input Xin 33

XOUT Crystal Oscillator Output Xout 34

Power Pins

Pin Name Pin Type Function Pin

AVDD 3.3V Power ADC Power 45, 51, 55, 65

AVSS Ground ADC Ground 39, 42, 48, 56,
64, 68

AVDD_PLL 3.3V Power PLL Power 53

AVSS_PLL Ground PLL Ground 54

AVDD_MPLL 3.3V Power MPLL Power 35

AVSS_MPLL Ground MPLL Ground 2, 36

VDDP 3.3V Power Digital Output Power 11, 21, 84, 94,
104, 114, 126

GNDP Ground Digital Output Ground 10, 20, 85, 95,
105, 115, 127

VDDC 2.5V Power Digital Core Power 18, 87, 97, 117

GNDC Ground Digital Core Ground 19, 86, 96, 116

No Connects

Pin Name Pin Type Function Pin

NC No Connect. Leave These Pins Floating.

6, 7, 26, 27, 40,

41, 43, 44, 46,

47, 49, 50, 106,

107, 122, 123

Resolution 8 Bits

DC ACCURACY

Differential Nonlinearity $\pm 0.5 +1.50/-1.0$ LSB

Integral Nonlinearity ± 1 LSB

No Missing Codes Guaranteed

ANALOG INPUT

Input Voltage Range

Minimum 0.5 V p-p

Maximum 1.0 V p-p

Input Bias Current 1 μ A

Input Full-Scale Matching 1.5 %FS

Brightness Level Adjustment 62 %FS

SWITCHING PERFORMANCE

Maximum Conversion Rate 165 MSPS

Minimum Conversion Rate 20 MSPS

HSYNC Input Frequency 15 200 kHz

PLL Clock Rate 20 162.5 MHz

PLL Jitter 500 ps p-p

Sampling Phase Tempco TBD ps/°C

DIGITAL INPUTS

Input Voltage, High (VIH) 2.5 V

Input Voltage, Low (VIL) 0.8 V

Input Current, High (IIH) -1.0 μ A

Input Current, Low (IIL) 1.0 μ A

Input Capacitance 5 pF

DIGITAL OUTPUTS

Output Voltage, High (VOH) VDDP-0.1 V

Output Voltage, Low (VOL) 0.1 V

DYNAMIC PERFORMANCE

Belinea 101705 (111723) Service Manual

Analog Bandwidth, Full Power 250 MHz
Channel to Channel Matching 0.5% Full-Scale
3.3V Supply Voltages VVDD_33 -0.3 3.6 V
2.5V Supply Voltages VVDD_25 -0.3 2.75 V
Input Voltage (5V tolerant inputs) VIN5Vtol -0.3 5.0 V
Input Voltage (non 5V tolerant inputs) VIN -0.3 VVDD_33 V

B. 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.

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.

C. 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.

D. AUDIO

The TDA7496L is a stereo 2W+2W class AB power amplifier assembled in the @ Powerdip 14+3+3 package, specially designed for high quality sound, TV and Monitor applications.

Features of the TDA7496L include linear volume control, Stand-by and mute functions

Ipeak Output Peak Current (internally limited) 0.7 0.9 A

Vin Input Signal 2.8 Vrms

GV Closed Loop Gain Vol Ctrl > 4.5V 28.5 30 31.5 dB

GvLine Monitor Out Gain Vol Ctrl > 4.5V; Zload > 30KΩ -1.5 0 1.5 dB

AMin VOL Attenuation at Minimum Volume Vol Ctrl < 0.5V 80 dB

BW 0.6 MHz

ABSOLUTE MAXIMUM RATINGS

Symbol Parameter Value Unit

VS DC Supply Voltage 26 V

VIN Maximum Input Voltage 8 Vpp

Ptot Total Power Dissipation (Tcase = 60°C) 6 W

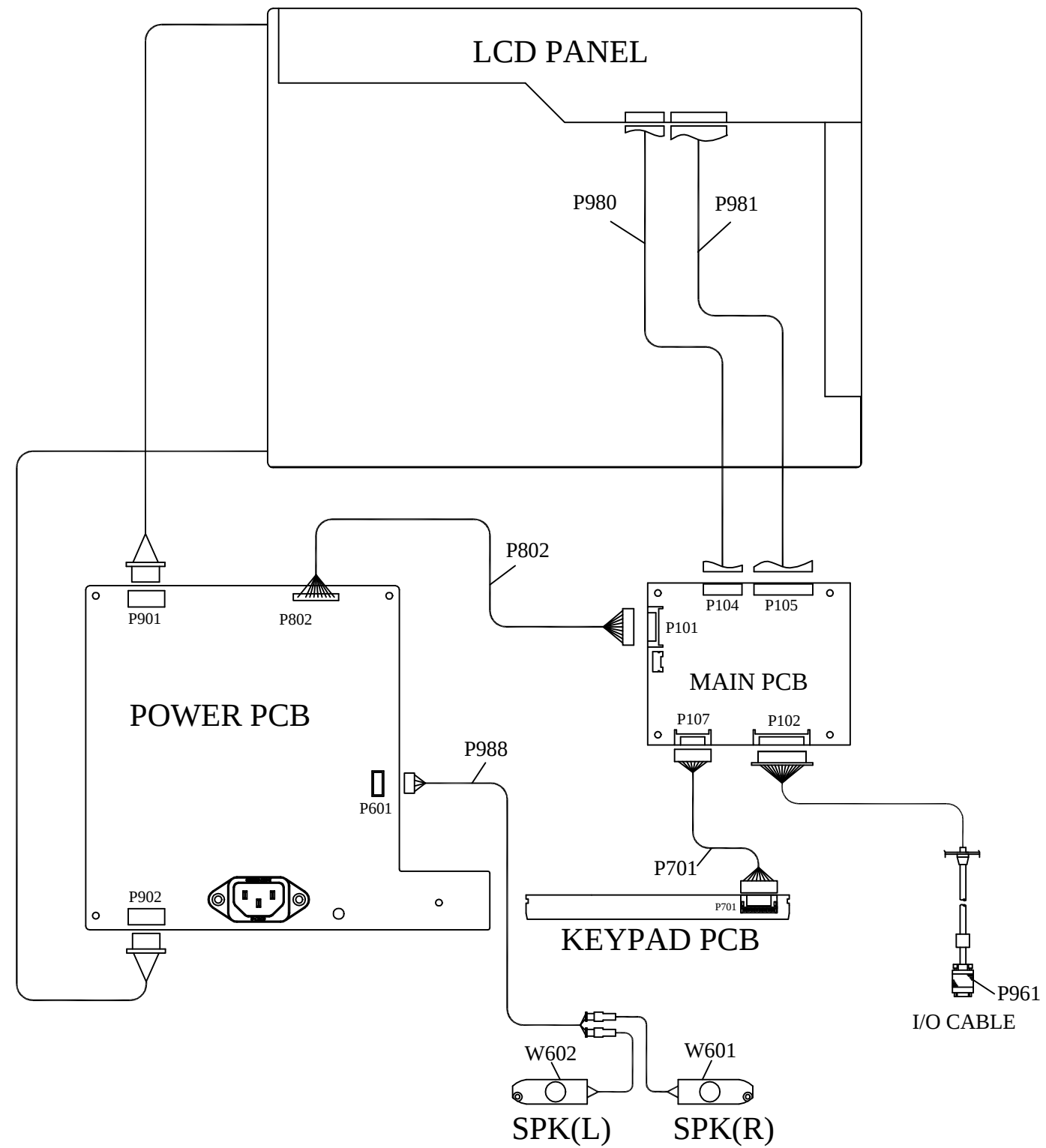
Tamb Ambient Operating Temperature 0 to 70 °C

Tstg, Tj Storage and Junction Temperature -40 to 150 °C

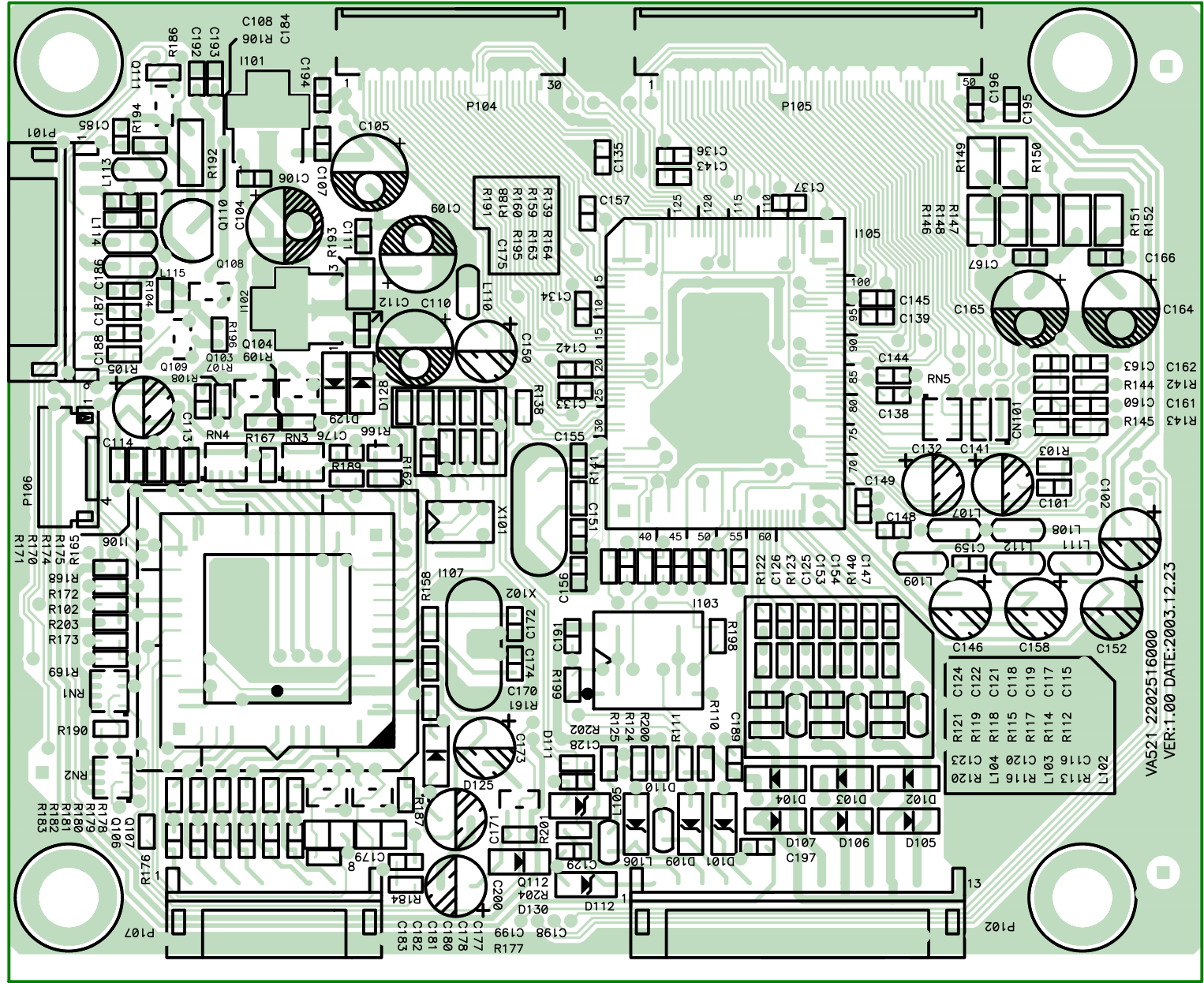
V6 Volume CTRL DC voltage 7 V

0 4 8 12 Area(cm2)

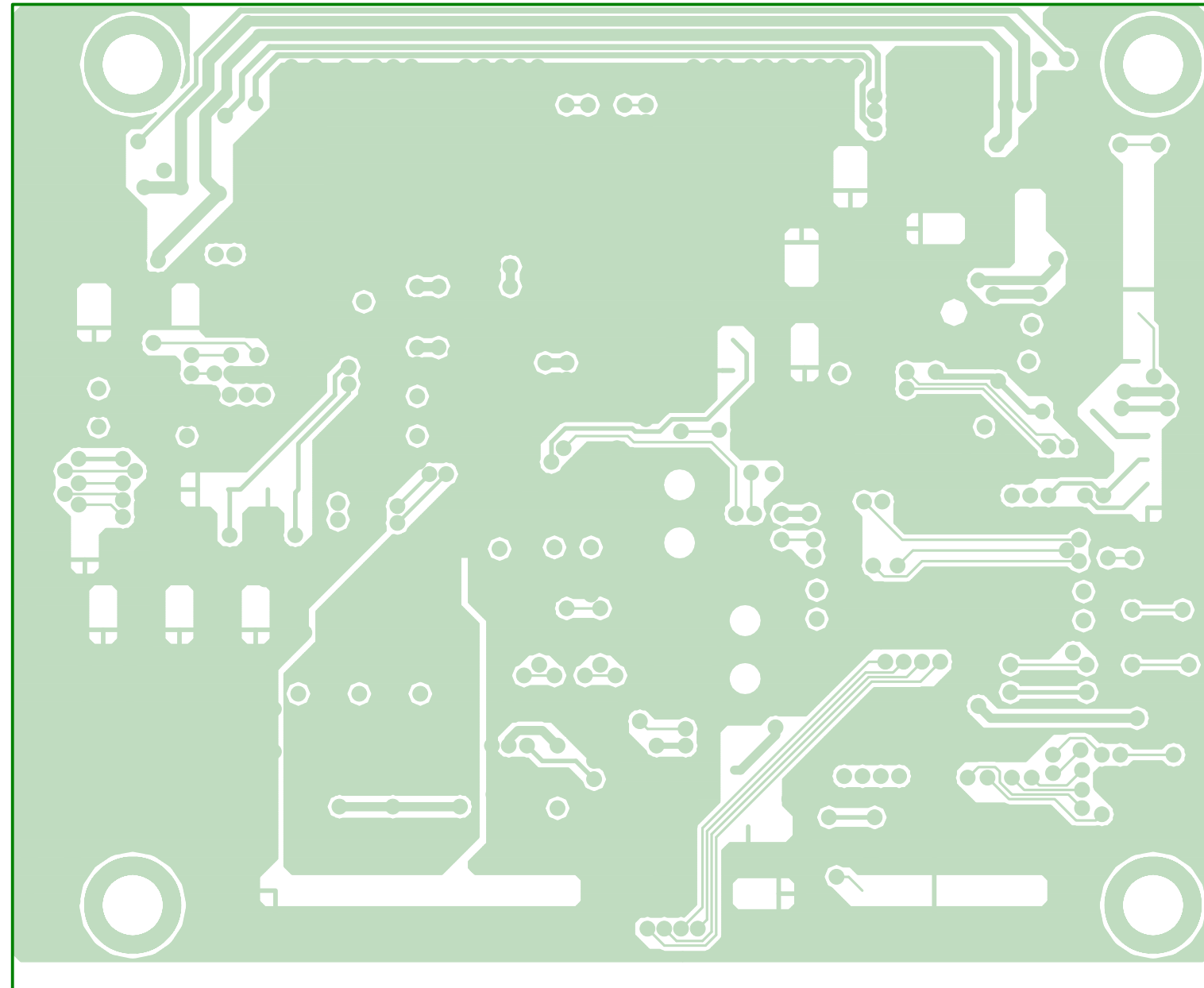
8. WIRING DIAGRAM



9. PCB LAYOUT
9.1. MAIN PCB TOP VIEW

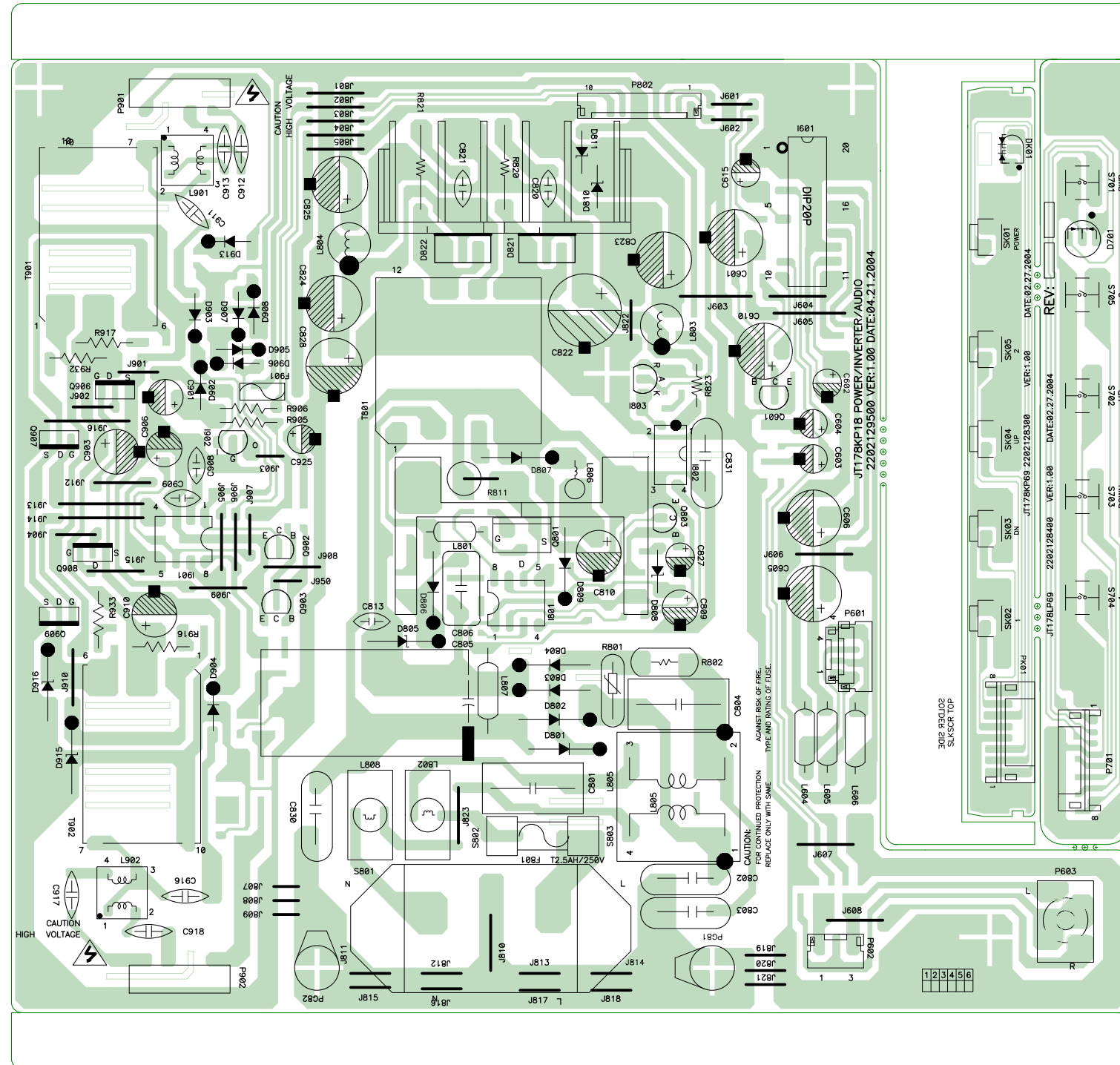


9.2. MAIN PCB BOTTOM VIEW



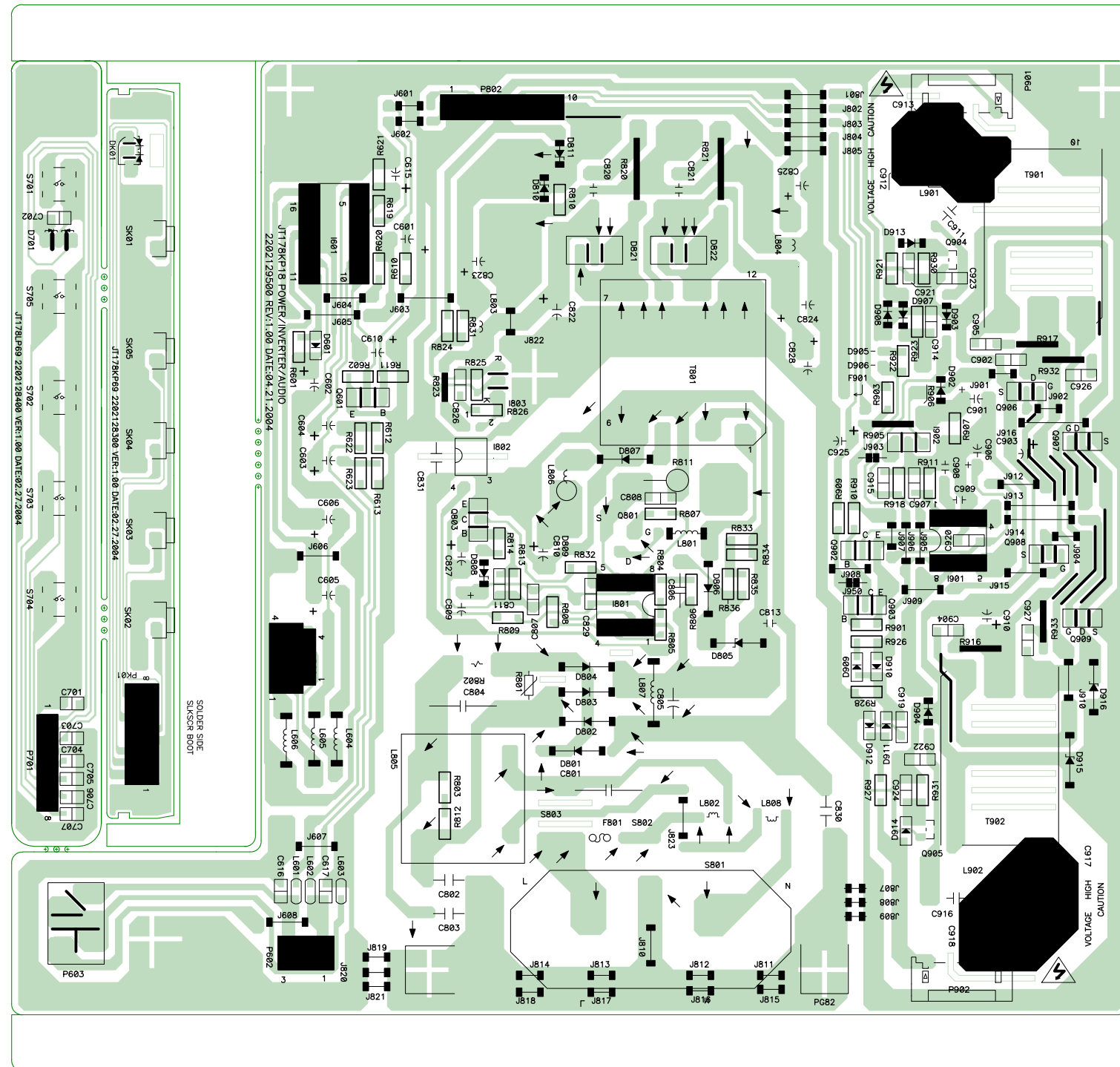
Belinea 101705 (111723) Service Manual

9.3. CON & POWER PCB TOP VIEW



Belinea 101705 (111723) Service Manual

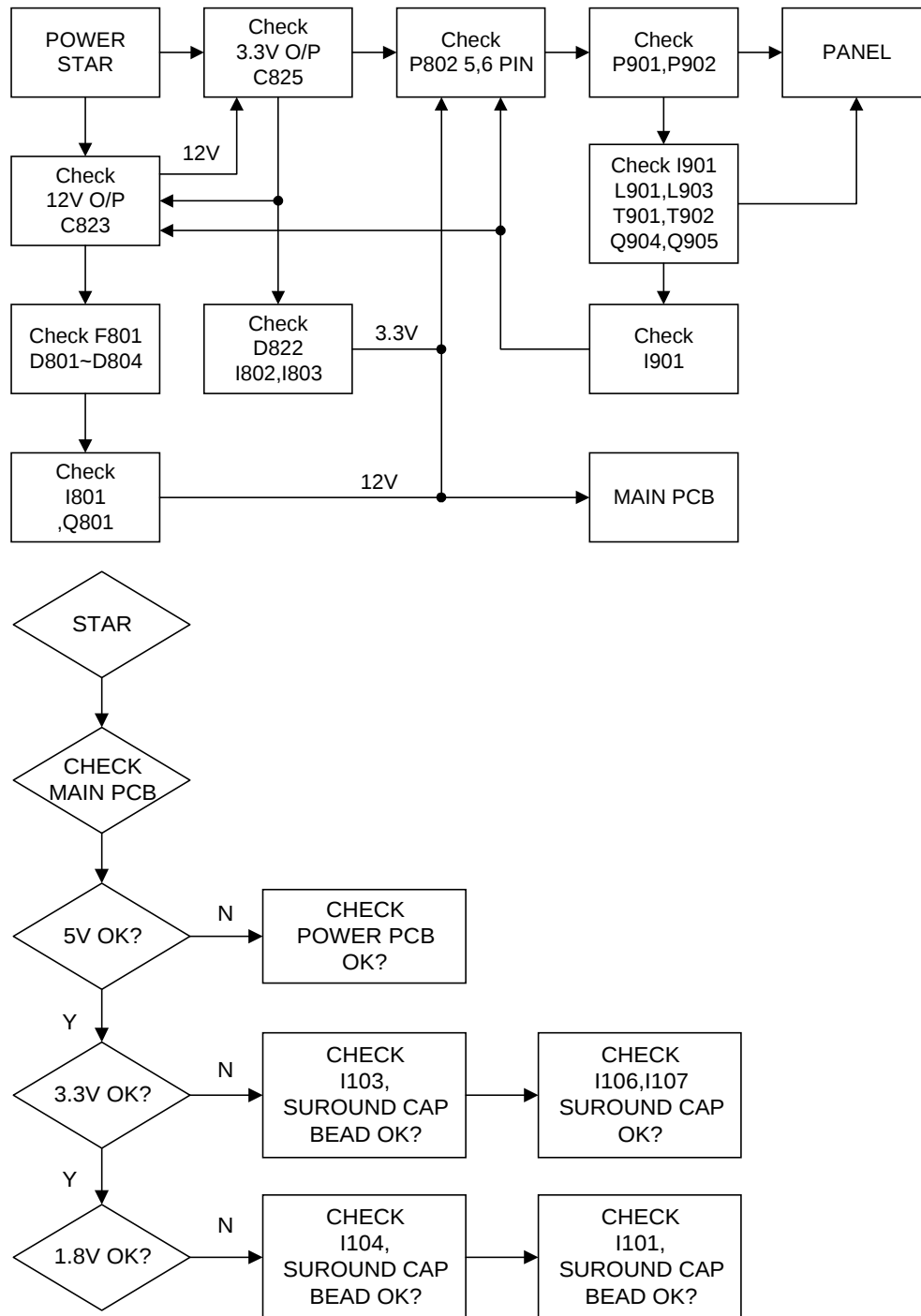
9.4. CON & POWER PCB BOTTOM VIEW



Belinea 101705 (111723) Service Manual

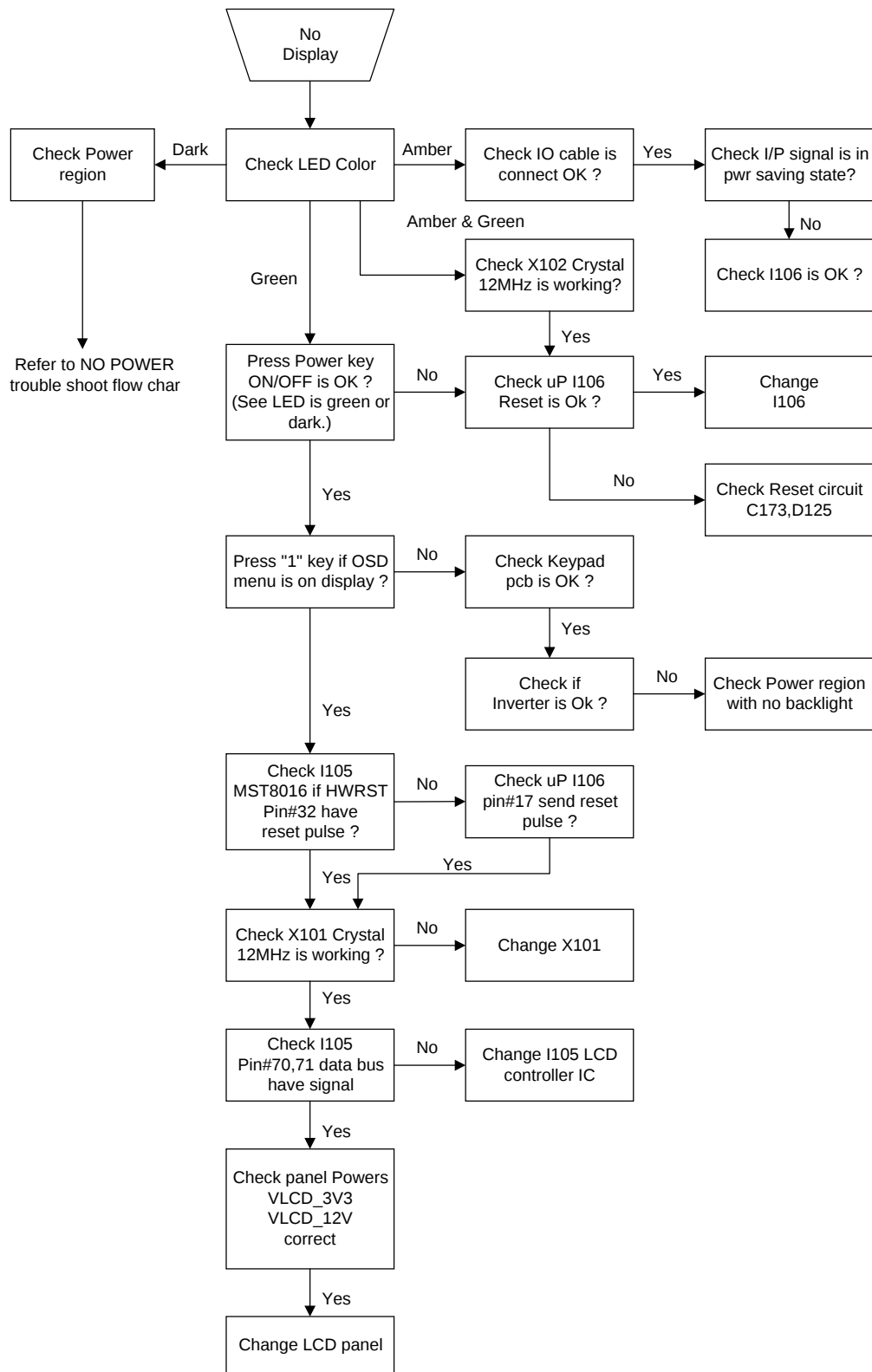
10. TROUBLE SHOOTING FLOW CHART

10.1. NO POWER



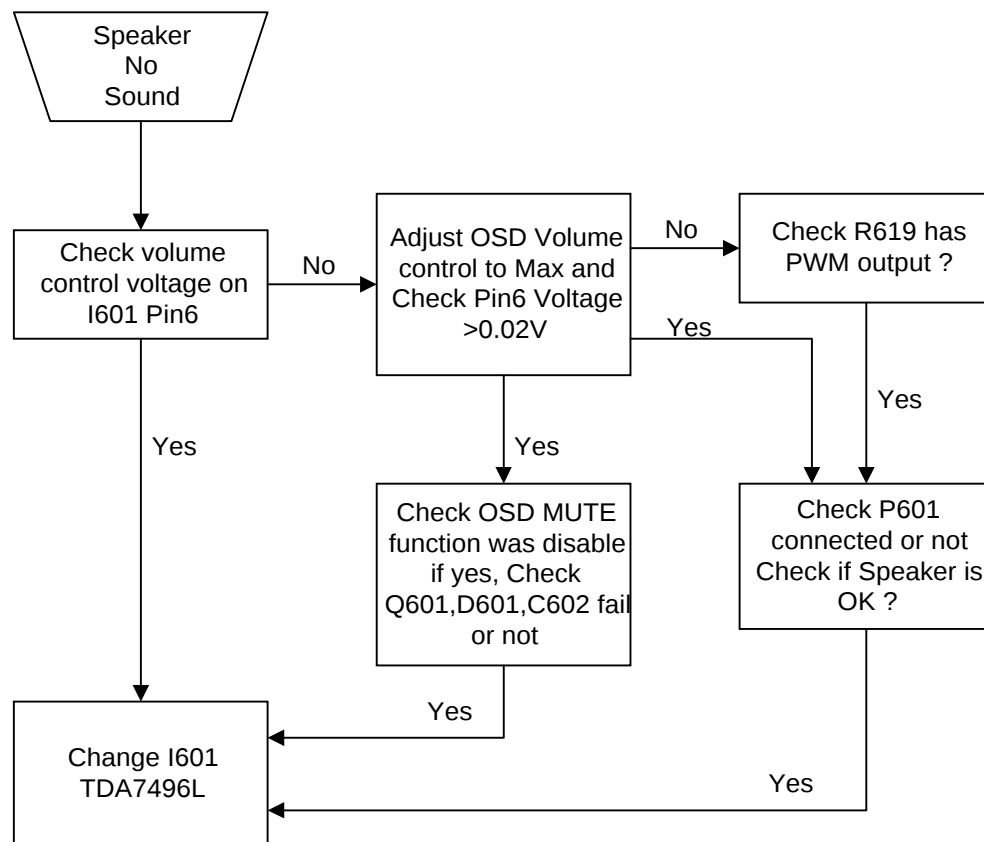
Belinea 101705 (111723) Service Manual

10.2. NO DISPLAY



Belinea 101705 (111723) Service Manual

10.3. NO SOUND



Belinea 101705 (111723) Service Manual

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)

Belinea 101705 (111723) Service Manual

F. Adjust Color Temperature:

(1) EEPROM INIT (5 BLOCKS):

Press “▼” key move cursor to EEPROM INIT, Press 2 key then monitor will INIT ADC value.

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

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



(Fig.2)

(4) 9300K verify: move cursor to 9300K Press 2 key.

Press “▼” ,“▲” key adjust R.G.B value

$x=0.283 \pm 0.03$

$y=0.298 \pm 0.03$

Press 1 key return to Fig.2

(5) 6500K verify: Repeat (4) press “▼” ,“▲” move cursor to 6500K press 2 key

$x=0.313 \pm 0.03$

$y=0.329 \pm 0.03$

$Y \geq 240 \text{ cd/m}^2$

(6) 5400K verify: Repeat (4) press “▼” ,“▲” move cursor to 5400K press 2 key

$x=0.332 \pm 0.03$

$y=0.348 \pm 0.03$

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

G. Color Temperature & Luminance Verify:

BRIGHTNESS MAX, CONTRAST MAX

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

6500K: $x=0.313 \pm 0.03$ $y=0.329 \pm 0.03$ $Y \geq 200 \text{ cd/m}^2$

5400K: $x=0.332 \pm 0.03$ $y=0.348 \pm 0.03$

2. Geometry:

(a). Set cross-hatch pattern and preset timing as timing table listed.

(b). Change to each mode in turn and wait for the monitor finish auto-alignment and save process before change to next mode.

(c). Until all of modes are agjusted, exit OSD menu and press PWR OFF to exit factory mode.

Belinea 101705 (111723) Service Manual

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		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C102		2336322613	CAP,MINI ELE 105°C	EC 22u/ 16V	4*7 P=2.5
C104		2336347613	CAP,MINI ELE 105°C	EC 47u/ 16V	5*7 P=2.5
C105		2336347613	CAP,MINI ELE 105°C	EC 47u/ 16V	5*7 P=2.5
C106		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
C108		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C109		2336347613	CAP,MINI ELE 105°C	EC 47u/ 16V	5*7 P=2.5
C110		2336347613	CAP,MINI ELE 105°C	EC 47u/ 16V	5*7 P=2.5
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		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C114		2336322613	CAP,MINI ELE 105°C	EC 22u/ 16V	4*7 P=2.5
C115	RA	2346147396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.047u K
C115	RB	2346247396	CAP,CHIP 125°C	CS 0603/X7R/25V	0.047u K
C117	RA	2346147396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.047u K
C117	RB	2346247396	CAP,CHIP 125°C	CS 0603/X7R/25V	0.047u K
C118	RA	2346147396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.047u K
C118	RB	2346247396	CAP,CHIP 125°C	CS 0603/X7R/25V	0.047u K
C121	RA	2346147396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.047u K
C121	RB	2346247396	CAP,CHIP 125°C	CS 0603/X7R/25V	0.047u K
C122	RA	2346147396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.047u K
C122	RB	2346247396	CAP,CHIP 125°C	CS 0603/X7R/25V	0.047u K
C124	RA	2346147396	CAP,CHIP 125°C	CS 0603/X7R/50V	0.047u K
C124	RB	2346247396	CAP,CHIP 125°C	CS 0603/X7R/25V	0.047u K
C125		2341147096	CAP,CHIP 125°C	CS 0603/COG/50V	47p J
C126		2341147096	CAP,CHIP 125°C	CS 0603/COG/50V	47p J
C128		2341147096	CAP,CHIP 125°C	CS 0603/COG/50V	47p J
C129		2341147096	CAP,CHIP 125°C	CS 0603/COG/50V	47p J
C132		2336610613	CAP,MINI ELE 105°C	EC 10u/ 50V	5*7 P=2.5
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		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C141		2336610613	CAP,MINI ELE 105°C	EC 10u/ 50V	5*7 P=2.5
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		2336610613	CAP,MINI ELE 105°C	EC 10u/ 50V	5*7 P=2.5
C147		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C148		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C149		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C150		2336610613	CAP,MINI ELE 105°C	EC 10u/ 50V	5*7 P=2.5
C151		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C152		2336610613	CAP,MINI ELE 105°C	EC 10u/ 50V	5*7 P=2.5
C153		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C154		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C155		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V	22p J
C156		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V	22p J
C157		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V	0.1u Z
C158		2336610613	CAP,MINI ELE 105°C	EC 10u/ 50V	5*7 P=2.5

Belinea 101705 (111723) Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
C159		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C164		2336347613	CAP,MINI ELE 105°C	EC 47u/ 16V 5*7	P=2.5
C165		2336310713	CAP,MINI ELE 105°C	EC 100u/ 16V 6.3*7	P=2.5
C166		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C167		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C170		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C172		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V 22p	J
C173		2336622513	CAP,MINI ELE 105°C	EC 2.2u/ 50V 4*7	P=2.5
C174		2341122096	CAP,CHIP 125°C	CS 0603/COG/50V 22p	J
C175		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C184		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C185		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C186		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C187		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C188		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C189		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C191		2346410496	CAP,CHIP 85°C	CS 0603/Y5V/50V 0.1u	Z
C197		2349901096	CAP,CHIP SPEC	AC0603470A 47P ± 10%	INPAQ
D101		2253400096	RES,CHIP 1/4	RC 1206 1/4 W 0ohm	J
D102	RA	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ TEMIC GS08	
D102	RB	2364600396	DIODE,SWITCH SMD	LL4148 DIODES MINIMELF	
D103	RA	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ TEMIC GS08	
D103	RB	2364600396	DIODE,SWITCH SMD	LL4148 DIODES MINIMELF	
D104	RA	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ TEMIC GS08	
D104	RB	2364600396	DIODE,SWITCH SMD	LL4148 DIODES MINIMELF	
D105	RA	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ TEMIC GS08	
D105	RB	2364600396	DIODE,SWITCH SMD	LL4148 DIODES MINIMELF	
D106	RA	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ TEMIC GS08	
D106	RB	2364600396	DIODE,SWITCH SMD	LL4148 DIODES MINIMELF	
D107	RA	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ TEMIC GS08	
D107	RB	2364600396	DIODE,SWITCH SMD	LL4148 DIODES MINIMELF	
D109		2364503996	DIODE,ZENER SMD	BZV55-C5V6 PHILIPS	
D110		2364503996	DIODE,ZENER SMD	BZV55-C5V6 PHILIPS	
D111		2364503996	DIODE,ZENER SMD	BZV55-C5V6 PHILIPS	
D112		2364503996	DIODE,ZENER SMD	BZV55-C5V6 PHILIPS	
D125	RA	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ TEMIC GS08	
D125	RB	2364600396	DIODE,SWITCH SMD	LL4148 DIODES MINIMELF	
D128	RA	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ TEMIC GS08	
D128	RB	2364600396	DIODE,SWITCH SMD	LL4148 DIODES MINIMELF	
D129	RA	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ TEMIC GS08	
D129	RB	2364600396	DIODE,SWITCH SMD	LL4148 DIODES MINIMELF	
I101	RA	2365812696	IC,LINEAR(SMD)	CM2860K1M223 SOT-223 CHAMPION	
I101	RB	2365813196	IC,LINEAR(SMD)	AME8805DEGT SOT-223 AME	
I105		2365929896	IC,DIGITAL SMD	MST8116A PQFP-128 Mstar	
I106		2365929996	IC,DIGITAL SMD	MTV312M64-AJ PLCC44 MYSON	
I107	RA	2365915896	IC,DIGITAL SMD	24LC16B/SN MICROCHIP SO08	
I107	RB	2365100996	IC,MEMORY	AT24C16AN-10SI-2.7 SOIC8 ATMEL	
L102		2253200096	RES,CHIP 1/10W	RC 0603 1/10W 0 ohm	J
L103		2253200096	RES,CHIP 1/10W	RC 0603 1/10W 0 ohm	J
L104		2253200096	RES,CHIP 1/10W	RC 0603 1/10W 0 ohm	J
L105		2379312196	BEAD,HI-IMPEDANCE	Z= 120ohm(100MHZ~) 0603	200mA
L106		2379312196	BEAD,HI-IMPEDANCE	Z= 120ohm(100MHZ~) 0603	200mA
L107		2379820196	BEAD,HI-IMPEDANCE	Z= 200ohm(100MHZ~) 0805	200mA
L108		2379520196	BEAD,HI-CURRENT	Z= 200ohm 0805 I=2.0A	
L109		2379820196	BEAD,HI-IMPEDANCE	Z= 200ohm(100MHZ~) 0805	200mA
L110		2379820196	BEAD,HI-IMPEDANCE	Z= 200ohm(100MHZ~) 0805	200mA
L111		2379820196	BEAD,HI-IMPEDANCE	Z= 200ohm(100MHZ~) 0805	200mA
L112		2379820196	BEAD,HI-IMPEDANCE	Z= 200ohm(100MHZ~) 0805	200mA
L113		2379520196	BEAD,HI-CURRENT	Z= 200ohm 0805 I=2.0A	
L114		2379520196	BEAD,HI-CURRENT	Z= 200ohm 0805 I=2.0A	
L115		2379520196	BEAD,HI-CURRENT	Z= 200ohm 0805 I=2.0A	
P101		2404371008	CONNECTOR	JST PH 9P TOP P=2.0 OR EQUAL	
P102		2404371012	CONNECTOR	JST PH 13P TOP P=2.0 OR EQUAL	
P104	RA	2407630230	SOCKET,SMD	6240-30-OR5P 0.5*30P KYOCERA	
P104	RB	2407630330	SOCKET,SMD	2206BL11230RLP 0.5*30P FRANCON	

Belinea 101705 (111723) Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION		REMARK
P105	RA	2407630250	SOCKET,SMD	6240-50-OR5P 0.5*50P KYOCERA		
P105	RB	2407630350	SOCKET,SMD	2206BL11250RLP 0.5*50P FRANCON		
P107		2404371007	CONNECTOR	JST PH 8P TOP P=2.0 OR EQUAL		
Q103	RA	2360100696	XISTOR,PNP R SMD	PMBS3906	SOT-23	PHILIPS
Q103	RB	2360100796	XISTOR,PNP R SMD	MMBT3906	SOT-23	DIODES
Q104	RA	2360100696	XISTOR,PNP R SMD	PMBS3906	SOT-23	PHILIPS
Q104	RB	2360100796	XISTOR,PNP R SMD	MMBT3906	SOT-23	DIODES
Q106	RA	2360301696	XISTOR,NPN R SMD	PMBS3904	SOT-23	PHILIPS
Q106	RB	2360301296	XISTOR,NPN R SMD	MMBT3904	SOT-23	DIODES
Q107	RA	2360301696	XISTOR,NPN R SMD	PMBS3904	SOT-23	PHILIPS
Q107	RB	2360301296	XISTOR,NPN R SMD	MMBT3904	SOT-23	DIODES
Q108	RA	2360501396	FET,P-CH SMD	AP2305N	SOT-23	APEC
Q108	RB	2360501296	FET,P-CH SMD	AO3411	SOT-23	ALPHA
Q109	RA	2360301696	XISTOR,NPN R SMD	PMBS3904	SOT-23	PHILIPS
Q109	RB	2360301296	XISTOR,NPN R SMD	MMBT3904	SOT-23	DIODES
Q110		2361111191	XISTOR,PNP R	2SA1020(Y)	TO-92	TOSHIBA
Q111	RA	2360301696	XISTOR,NPN R SMD	PMBS3904	SOT-23	PHILIPS
Q111	RB	2360301296	XISTOR,NPN R SMD	MMBT3904	SOT-23	DIODES
R102		2253218296	RES,CHIP 1/10W	RC 0603 1/10W		1.8Kohm J
R103		2253210296	RES,CHIP 1/10W	RC 0603 1/10W		1Kohm J
R104		2253210396	RES,CHIP 1/10W	RC 0603 1/10W		10Kohm J
R106		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R107		2253210396	RES,CHIP 1/10W	RC 0603 1/10W		10Kohm J
R108		2253227296	RES,CHIP 1/10W	RC 0603 1/10W		2.7Kohm J
R109		2253210296	RES,CHIP 1/10W	RC 0603 1/10W		1Kohm J
R111		2253200096	RES,CHIP 1/10W	RC 0603 1/10W		0 ohm J
R112		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R113		2251275096	RES,CHIP 1/10	RC 0603 1/10W		75 ohm F
R114		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R115		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R116		2251275096	RES,CHIP 1/10	RC 0603 1/10W		75 ohm F
R118		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R119		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R120		2251275096	RES,CHIP 1/10	RC 0603 1/10W		75 ohm F
R121		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R122		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R123		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R124		2253222296	RES,CHIP 1/10W	RC 0603 1/10W		2.2Kohm J
R125		2253222296	RES,CHIP 1/10W	RC 0603 1/10W		2.2Kohm J
R140		2251239006	RES,CHIP 1/10	RC 0603 1/10W		390 ohm F
R141		2253210596	RES,CHIP 1/10W	RC 0603 1/10W		1Mohm J
R142		2253200096	RES,CHIP 1/10W	RC 0603 1/10W		0 ohm J
R143		2253200096	RES,CHIP 1/10W	RC 0603 1/10W		0 ohm J
R144		2253233096	RES,CHIP 1/10W	RC 0603 1/10W		33 ohm J
R146		2253300096	RES,CHIP 1/8	RC 0805 1/8 W		0ohm J
R147		2253300096	RES,CHIP 1/8	RC 0805 1/8 W		0ohm J
R150		2253300096	RES,CHIP 1/8	RC 0805 1/8 W		0ohm J
R152		2253300096	RES,CHIP 1/8	RC 0805 1/8 W		0ohm J
R158		2253210596	RES,CHIP 1/10W	RC 0603 1/10W		1Mohm J
R159		2253247296	RES,CHIP 1/10W	RC 0603 1/10W		4.7Kohm J
R160		2253247296	RES,CHIP 1/10W	RC 0603 1/10W		4.7Kohm J
R161		2253222396	RES,CHIP 1/10W	RC 0603 1/10W		22Kohm J
R162		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R163		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R164		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R168		2253247296	RES,CHIP 1/10W	RC 0603 1/10W		4.7Kohm J
R169		2251290916	RES,CHIP 1/10	RC 0603 1/10W		9.09Kohm F
R170		2253222296	RES,CHIP 1/10W	RC 0603 1/10W		2.2Kohm J
R171		2253222296	RES,CHIP 1/10W	RC 0603 1/10W		2.2Kohm J
R172		2253200096	RES,CHIP 1/10W	RC 0603 1/10W		0 ohm J
R173		2251233216	RES,CHIP 1/10	RC 0603 1/10W		3.32Kohm F
R174		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R175		2253210196	RES,CHIP 1/10W	RC 0603 1/10W		100 ohm J
R176		2253247296	RES,CHIP 1/10W	RC 0603 1/10W		4.7Kohm J
R177		2253247296	RES,CHIP 1/10W	RC 0603 1/10W		4.7Kohm J

Belinea 101705 (111723) Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R178		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R179		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R180		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R181		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R182		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R183		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R184		2253210196	RES,CHIP 1/10W	RC 0603 1/10W	100 ohm J
R187		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R189		2253210296	RES,CHIP 1/10W	RC 0603 1/10W	1Kohm J
R190		2253210296	RES,CHIP 1/10W	RC 0603 1/10W	1Kohm J
R191		2253210396	RES,CHIP 1/10W	RC 0603 1/10W	10Kohm J
R192		2253510296	RES,CHIP 1/2	RC 1210 1/3 W	1Kohm J
R193		2253300096	RES,CHIP 1/8	RC 0805 1/8 W	0ohm J
R194		2253247296	RES,CHIP 1/10W	RC 0603 1/10W	4.7Kohm J
R196		2253222196	RES,CHIP 1/10W	RC 0603 1/10W	220 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
R201		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
R202		2253200096	RES,CHIP 1/10W	RC 0603 1/10W	0 ohm J
RN1		2259210308	RES,CHIP NETWORKS	8P4R 1/16W10Kohm	J P=0.8
RN2		2259210308	RES,CHIP NETWORKS	8P4R 1/16W10Kohm	J P=0.8
RN3		2259210308	RES,CHIP NETWORKS	8P4R 1/16W10Kohm	J P=0.8
RN4		2259210308	RES,CHIP NETWORKS	8P4R 1/16W10Kohm	J P=0.8
RN5		2259233008	RES,CHIP NETWORKS	8P4R 1/16W33ohm	J P=0.8
U101		2202516000	PCB MULTILAYER	VA521 M/B FR4*2	100*82 V1.00
X101		2369102901	XTAL,OSC	14.31818MHZ/49US	
X102		2369103601	XTAL,OSC	12.000MHZ/49US	

CON P.C.BOARD

D701	2363700001	LED	YL-319GYW-C-Q1-04A	Y10W CHIE
P701	2427408202	WIRE HARNESS	8P H/B 1061#26 L=200mm	P=2.0
S701	2403700600	SWITCH,PU-TC	SKHHLH1520-SV	
S702	2403700600	SWITCH,PU-TC	SKHHLH1520-SV	
S703	2403700600	SWITCH,PU-TC	SKHHLH1520-SV	
S704	2403700600	SWITCH,PU-TC	SKHHLH1520-SV	
S705	2403700600	SWITCH,PU-TC	SKHHLH1520-SV	
U701	2202128300	PC BOARD	JT178KP69 K/B CEM1	11.9*130

POWER P.C.BOARD

C601	2333347791	CAP,ELE 105'C	EC 470u/ 16V	10*12.5	P=5.0
C602	2333622691	CAP,ELE 105'C	EC 22u/ 50V	5*11	P=5.0
C603	2333610591	CAP,ELE 105'C	EC 1u/ 50V	5*11	P=5.0
C604	2333610591	CAP,ELE 105'C	EC 1u/ 50V	5*11	P=5.0
C605	2333347791	CAP,ELE 105'C	EC 470u/ 16V	10*12.5	P=5.0
C606	2333347791	CAP,ELE 105'C	EC 470u/ 16V	10*12.5	P=5.0
C610	2333322791	CAP,ELE 105'C	EC 220u/ 16V	8*11	P=5.0
C615	2333610691	CAP,ELE 105'C	EC 10u/ 50V	5*11	P=5.0
C616	2342110296	CAP,CHIP 125'C	CS 0805/COG/50V	1000p	J
C617	2342110296	CAP,CHIP 125'C	CS 0805/COG/50V	1000p	J
C801	2300922401	CAP MTL MINI	X2 0.22u/275V	P=15.0	M
C802	2287247212	CAP,CER	Y2 4700p/250V Y5V	P=10.0	M
C803	2287247212	CAP,CER	Y2 4700p/250V Y5V	P=10.0	M
C804	2300922401	CAP MTL MINI	X2 0.22u/275V	P=15.0	M
C805	2357510708	EC HI-RIPPLE 105C	EC 100u/400V	18*32	P=7.5
C806	2303210312	CAP,MTL	CF93M 0.010UF	250V	K
C807	2349410496	CAP,CHIP 85'C	CS 1206/Y5V/50V	0.1u	Z
C808	2349110496	CAP,CHIP 125'C	CS 1206/X7R/50V	0.1u	K
C809	2333622691	CAP,ELE 105'C	EC 22u/ 50V	5*11	P=5.0
C810	2333510791	CAP,ELE 105'C	EC 100u/ 35V	8*11	P=5.0
C811	2349410496	CAP,CHIP 85'C	CS 1206/Y5V/50V	0.1u	Z
C813	2285110291	CAP,CER	CC 1000P/1KV Y5P	P=5.0	K
C820	2286222112	CAP,CER 125'C	CK45BN 220.000PF	2KV	K
C821	2286222112	CAP,CER 125'C	CK45BN 220.000PF	2KV	K

Belinea 101705 (111723) Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION		REMARK
C822		2330005801	CAP,MINI ELE	EC 1500u/ 16V	10*20	P=5.0
C823		2330005801	CAP,MINI ELE	EC 1500u/ 16V	10*20	P=5.0
C824	RA	2330006312	CAP,ELE(3000HR)	EC 1500u/ 10V	10*20	P=5.0
C824	RB	2335215862	CAP,ELE Low Esr 105°C	EC 1500u/ 10V	10*20	P=5.0
C825		2335210811	CAP,ELE Low Esr 105°C	EC 1000u/ 10V	8*16	P=3.5
C826		2349110496	CAP,CHIP 125°C	CS 1206/X7R/50V	0.1u	K
C827		2333610591	CAP,ELE 105°C	EC 1u/ 50V	5*11	P=5.0
C828	RA	2330006312	CAP,ELE(3000HR)	EC 1500u/ 10V	10*20	P=5.0
C828	RB	2335215862	CAP,ELE Low Esr 105°C	EC 1500u/ 10V	10*20	P=5.0
C829		2349110296	CAP,CHIP 125°C	CS 1206/X7R/50V	1000p	K
C830		2287247212	CAP,CER	Y2 4700p/250V Y5V	P=10.0	M
C831		2287247212	CAP,CER	Y2 4700p/250V Y5V	P=10.0	M
C901		2333622691	CAP,ELE 105°C	EC 22u/ 50V	5*11	P=5.0
C902		2349410496	CAP,CHIP 85°C	CS 1206/Y5V/50V	0.1u	Z
C903		2335347713	CAP,ELE Low Esr 105°C	EC 470u/ 16V	8*12	P=5.0
C904		2349168296	CAP,CHIP 125°C	CS 1206/X7R/50V	6800p	K
C905		2349168296	CAP,CHIP 125°C	CS 1206/X7R/50V	6800p	K
C906		2333622691	CAP,ELE 105°C	EC 22u/ 50V	5*11	P=5.0
C907		2349147396	CAP,CHIP 125°C	CS 1206/X7R/50V	0.047u	K
C908		2272147091	CAP,CER	TC 47p/50V CH	P=5.0	J
C909		2272133191	CAP,CER	TC 330p/50V CH	P=5.0	J
C910		2335347713	CAP,ELE Low Esr 105°C	EC 470u/ 16V	8*12	P=5.0
C911		2275415001	CAP,CER	TC 15p/3KV SL	P=7.5	J
C912		2275439001	CAP,CER	TC 39p/3KV SL	P=7.5	J
C913		2275439001	CAP,CER	TC 39p/3KV SL	P=7.5	J
C914		2349147396	CAP,CHIP 125°C	CS 1206/X7R/50V	0.047u	K
C915		2349110396	CAP,CHIP 125°C	CS 1206/X7R/50V	0.01u	K
C916		2275415001	CAP,CER	TC 15p/3KV SL	P=7.5	J
C917		2275439001	CAP,CER	TC 39p/3KV SL	P=7.5	J
C918		2275439001	CAP,CER	TC 39p/3KV SL	P=7.5	J
C919		2349147396	CAP,CHIP 125°C	CS 1206/X7R/50V	0.047u	K
C920		2349410496	CAP,CHIP 85°C	CS 1206/Y5V/50V	0.1u	Z
C921		2349410496	CAP,CHIP 85°C	CS 1206/Y5V/50V	0.1u	Z
C922		2349115396	CAP,CHIP 125°C	CS 1206/X7R/50V	0.015u	K
C923		2349115396	CAP,CHIP 125°C	CS 1206/X7R/50V	0.015u	K
C924		2349410496	CAP,CHIP 85°C	CS 1206/Y5V/50V	0.1u	Z
C926		2349168296	CAP,CHIP 125°C	CS 1206/X7R/50V	6800p	K
C927		2349168296	CAP,CHIP 125°C	CS 1206/X7R/50V	6800p	K
D601	RA	2364200896	DIODE,RECT(SMD)	BAS32L SOD80C		PHILIPS
D601	RB	2364600196	DIODE,SWITCH SMD	LL4148 3.5X1.5φ		TEMIC GS08
D801	RA	2363227295	DIODE,RECT	2A07		TSC
D801	RB	2363221195	DIODE,RECT	PG208		PEC
D801	RC	2363224295	DIODE,RECT	20KDA60		INTER
D801	RD	2363233795	DIODE,RECT	PS2010 2A/1000V	DO-15	PEC
D802	RA	2363227295	DIODE,RECT	2A07		TSC
D802	RB	2363221195	DIODE,RECT	PG208		PEC
D802	RC	2363224295	DIODE,RECT	20KDA60		INTER
D802	RD	2363233795	DIODE,RECT	PS2010 2A/1000V	DO-15	PEC
D803	RA	2363227295	DIODE,RECT	2A07		TSC
D803	RB	2363221195	DIODE,RECT	PG208		PEC
D803	RC	2363224295	DIODE,RECT	20KDA60		INTER
D803	RD	2363233795	DIODE,RECT	PS2010 2A/1000V	DO-15	PEC
D804	RA	2363227295	DIODE,RECT	2A07		TSC
D804	RB	2363221195	DIODE,RECT	PG208		PEC
D804	RC	2363224295	DIODE,RECT	20KDA60		INTER
D804	RD	2363233795	DIODE,RECT	PS2010 2A/1000V	DO-15	PEC
D805	RA	2362900395	TRAN V SUPPRESSOR	P6KE130A	DO-15	PEC
D805	RB	2362900895	TRAN V SUPPRESSOR	P6KE130A	DO-15	WILLAS
D806	RA	2363215495	DIODE,RECT	BYV26C		PHILIPS
D806	RB	2363231995	DIODE,RECT	UF4007		PEC
D806	RC	2363223195	DIODE,RECT	UF4007		GS
D807	RA	2363230795	DIODE,RECT	1H5G		WILLAS
D807	RB	2363601395	DIODE,SWITCH	1U4G 1A/400V		PEC
D808		2363514895	DIODE,ZENER	HZ20-2 19.5-20.4V 0.5W		HITACHI
D809		2363222195	DIODE,RECT	SB140		PEC

Belinea 101705 (111723) Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
D811		2363510895	DIODE,ZENER	HZ9C-1 8.9-9.3V 0.5W	HITACHI
D821	RA	2363300300	DIODE,SCHOTTKY	FCH20A15 20A/150V	NI
D821	RB	2363301900	DIODE,SCHOTTKY	SRF20150 ITO-220	MOSPEC
D821	RC	2363302000	DIODE,SCHOTTKY	GMR20H150C TO-220FPAB	GAMMA
D822	RA	2363301000	DIODE,SCHOTTKY	FCQ30A06 30A/60V (TO-220AB)	NI
D822	RB	2363302400	DIODE,SCHOTTKY	GMR3060CTBF3T TO-220FPAB	GAMMA
D902		2363600195	DIODE,SWITCH	1N4148 DO-35	T
D903		2363600195	DIODE,SWITCH	1N4148 DO-35	T
D904		2363600195	DIODE,SWITCH	1N4148 DO-35	T
D905		2363600195	DIODE,SWITCH	1N4148 DO-35	T
D906		2363600195	DIODE,SWITCH	1N4148 DO-35	T
D907		2363600195	DIODE,SWITCH	1N4148 DO-35	T
D908		2363600195	DIODE,SWITCH	1N4148 DO-35	T
D909	RA	2364600396	DIODE,SWITCH SMD	LL4148	DIODES MINIMELF
D909	RB	2363600696	DIODE,SWITCH	1N4148 SMD	
D910	RA	2364600396	DIODE,SWITCH SMD	LL4148	DIODES MINIMELF
D910	RB	2363600696	DIODE,SWITCH	1N4148 SMD	
D911	RA	2364600396	DIODE,SWITCH SMD	LL4148	DIODES MINIMELF
D911	RB	2363600696	DIODE,SWITCH	1N4148 SMD	
D912	RA	2364600396	DIODE,SWITCH SMD	LL4148	DIODES MINIMELF
D912	RB	2363600696	DIODE,SWITCH	1N4148 SMD	
D913		2363600195	DIODE,SWITCH	1N4148 DO-35	T
D914	RA	2364600396	DIODE,SWITCH SMD	LL4148	DIODES MINIMELF
D914	RB	2363600696	DIODE,SWITCH	1N4148 SMD	
D915	RA	2362900695	TRAN V SUPPRESSOR	P6KE30A DO-15	PEC
D915	RB	2362900795	TRAN V SUPPRESSOR	P6KE30A DO-15	WILLAS
D916	RA	2362900695	TRAN V SUPPRESSOR	P6KE30A DO-15	PEC
D916	RB	2362900795	TRAN V SUPPRESSOR	P6KE30A DO-15	WILLAS
F801	RA	2213125207	FUSE	FUSE 2.5A/250V 21502.5	LITTEL
F801	RB	2213125211	FUSE	FUSE 2.5A/250V SG501302.5	PICO
F901	RA	2213270295	FUSE MICRO	20N7000FS 7A/125V	PICO
F901	RB	2213270205	FUSE MICRO	R251007 7A/125V(T52)	LITTEL
I601		2365329700	IC,LINEAR	TDA7496L DIP-20P	SGS
I801		2365330300	IC,LINEAR	SG6841D DIP-8	SG
I802	RA	2362401800	PHOTO COUPLR	TLP621(D4-GR-LF2)	TOSHIBA
I802	RB	2362401600	PHOTO COUPLR	TLP721F(D4-GR)	TOSHIBA
I803	RA	2365328191	IC,LINEAR	AP431VA TO-92	ATC
I803	RB	2365327691	IC,LINEAR	CM431BCN	CHAMPION
I803	RC	2365321991	IC,LINEAR	KA431AZTA TO-92	FAIRCHILD
I803	RD	2365319391	IC,LINEAR	TL431CLP	TI
I901		2365330200	IC,LINEAR	OZ9RRD PDIP-8	MICRO
I902	RA	2365330291	IC,LINEAR	KA78L05AZ TO-92	FAIRCHILD
I902	RB	2365330491	IC,LINEAR	HC78L05 TO-92	HC-SEMI
I902	RC	2365330591	IC,LINEAR	L78L05ACZ TO-92	ST
L601		2379822106	BEAD,HI-IMPEDANCE	Z= 220ohm(200MHZ~) 0805	200mA
L602		2379822106	BEAD,HI-IMPEDANCE	Z= 220ohm(200MHZ~) 0805	200mA
L603		2379822106	BEAD,HI-IMPEDANCE	Z= 220ohm(200MHZ~) 0805	200mA
L604		2379101495	FERRITE CORE	3.5X9X0.8	
L605		2379101495	FERRITE CORE	3.5X9X0.8	
L606		2379101495	FERRITE CORE	3.5X9X0.8	
L801		2379101595	FERRITE CORE	3.5X4.5X0.8	
L802		2371111900	COIL,CHOKE	250uH +-7%	
L803		2371154600	COIL,CHOKE	JD176 5.2UH 15.5T(REF)	
L804		2371154600	COIL,CHOKE	JD176 5.2UH 15.5T(REF)	
L805		2371121301	COIL,CHOKE	ET-20 0.32mm*35Ts 21mH	
L806		2379103500	FERRITE CORE	0.5φ3T 680 OHM MINAT 100MHZ	
L807		2379101495	FERRITE CORE	3.5X9X0.8	
L808		2371111900	COIL,CHOKE	250uH +-7%	
L901		2371140401	COIL,CHOKE	300mH/300mH (0.05mm/410Ts)*2	
L902		2371140401	COIL,CHOKE	300mH/300mH (0.05mm/410Ts)*2	
P601		2404301003	CONNECTOR	JST XH 4P SIDE P=2.5 OR EQUAL	
P603		2408200400	PIN JACK,2P	3.5 PHONE JACK 2SJ-0540SINGATR	
P802		2427410121	WIRE HARNESS	10P H/B 1061#24 L=120mm P=2.0	
P901	RA	2404380403	CONNECTOR	88227-032X 4.0mm	ACE
P901	RB	2404380503	CONNECTOR	CP044AP1HT1-P3	CVILUX

Belinea 101705 (111723) Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
P902	RA	2404380403	CONNECTOR	88227-032X 4.0mm	ACE
P902	RB	2404380503	CONNECTOR	CP044AP1HT1-P3	CVILUX
Q601	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q601	RB	2361302591	XISTOR,NPN R	2SC945(P) TO-92	NEC
Q801		2361610000	FET,N-CH	AP09N701-A TO-220CMF	APEC
Q803	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q803	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q803	RC	2361302591	XISTOR,NPN R	2SC945(P) TO-92	NEC
Q902	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q902	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q902	RC	2361302591	XISTOR,NPN R	2SC945(P) TO-92	NEC
Q904		2360608496	FET,N-CH(SMD)	2N7002K SOT-23	VISHAY
Q905		2360608496	FET,N-CH(SMD)	2N7002K SOT-23	VISHAY
Q906	RA	2361610800	FET,N-CH	AP9960J TO-251(T-TYPE)	APEC
Q906	RB	2361610810	FET,N-CH	AP9960J TO-251(W-TYPE)	APEC
Q907	RA	2361610800	FET,N-CH	AP9960J TO-251(T-TYPE)	APEC
Q907	RB	2361610810	FET,N-CH	AP9960J TO-251(W-TYPE)	APEC
Q908	RA	2361610800	FET,N-CH	AP9960J TO-251(T-TYPE)	APEC
Q908	RB	2361610810	FET,N-CH	AP9960J TO-251(W-TYPE)	APEC
Q909	RA	2361610800	FET,N-CH	AP9960J TO-251(T-TYPE)	APEC
Q909	RB	2361610810	FET,N-CH	AP9960J TO-251(W-TYPE)	APEC
R601		2253410496	RES,CHIP 1/4	RC 1206 1/4 W	100Kohm J
R602		2253439296	RES,CHIP 1/4	RC 1206 1/4 W	3.9Kohm J
R610		2253410396	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm J
R611		2253410396	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm J
R612		2253410396	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm J
R613		2253410396	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm J
R619		2253400096	RES,CHIP 1/4	RC 1206 1/4 W	0ohm J
R620		2253447296	RES,CHIP 1/4	RC 1206 1/4 W	4.7Kohm J
R621		2253422296	RES,CHIP 1/4	RC 1206 1/4 W	2.2Kohm J
R622		2253410196	RES,CHIP 1/4	RC 1206 1/4 W	100ohm J
R623		2253410196	RES,CHIP 1/4	RC 1206 1/4 W	100ohm J
R802		2229201212	THERMISTOR,PTH	SCK-103 10+-20% 3A	THINKING
R803		2253447496	RES,CHIP 1/4	RC 1206 1/4 W	470Kohm J
R804		2253451496	RES,CHIP 1/4	RC 1206 1/4 W	510Kohm J
R805		2253451496	RES,CHIP 1/4	RC 1206 1/4 W	510Kohm J
R806		2253451496	RES,CHIP 1/4	RC 1206 1/4 W	510Kohm J
R807		2253410096	RES,CHIP 1/4	RC 1206 1/4 W	10ohm J
R808		2251422126	RES,CHIP 1/4	RC 1206 1/4 W	22.1Kohm F
R809		2253410996	RES,CHIP 1/4	RC 1206 1/4 W	1ohm J
R810		2251418216	RES,CHIP 1/4	RC 1206 1/4 W	1.82Kohm F
R811		2241247816	RES,WIR 2	RW 2WS 0.47 ohm	P=7.0 J
R812		2253447496	RES,CHIP 1/4	RC 1206 1/4 W	470Kohm J
R813		2253433296	RES,CHIP 1/4	RC 1206 1/4 W	3.3Kohm J
R814		2253447196	RES,CHIP 1/4	RC 1206 1/4 W	470ohm J
R820		2232422095	RES,CBN 1/4	RD 1/4W 22.00	J
R821		2232422095	RES,CBN 1/4	RD 1/4W 22.00	J
R823		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R824		2251468116	RES,CHIP 1/4	RC 1206 1/4 W	6.81Kohm F
R825		2251410026	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm F
R826		2253410196	RES,CHIP 1/4	RC 1206 1/4 W	100ohm J
R831		2251482526	RES,CHIP 1/4	RC 1206 1/4 W	82.5Kohm F
R832		2253410096	RES,CHIP 1/4	RC 1206 1/4 W	10ohm J
R833		2253447496	RES,CHIP 1/4	RC 1206 1/4 W	470Kohm J
R834		2253447496	RES,CHIP 1/4	RC 1206 1/4 W	470Kohm J
R835		2253447496	RES,CHIP 1/4	RC 1206 1/4 W	470Kohm J
R836		2253447496	RES,CHIP 1/4	RC 1206 1/4 W	470Kohm J
R901		2253410396	RES,CHIP 1/4	RC 1206 1/4 W	10Kohm J
R905		2239222025	RES,PRE 1/4 S	RN 1/4WS 22.00K	F
R906		2239210025	RES,PRE 1/4 S	RN 1/4WS 10.00K	F
R907		2251418026	RES,CHIP 1/4	RC 1206 1/4 W	18Kohm F
R909		2253410196	RES,CHIP 1/4	RC 1206 1/4 W	100ohm J
R911		2253451596	RES,CHIP 1/4	RC 1206 1/4 W	5.1Mohm J
R916		2232410095	RES,CBN 1/4	RD 1/4W 10 ohm	J
R917		2232410095	RES,CBN 1/4	RD 1/4W 10 ohm	J

Belinea 101705 (111723) Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R918		2253410596	RES,CHIP 1/4	RC 3216 1/4W	1.00M J
R921		2251439206	RES,CHIP 1/4	RC 1206 1/4 W	392 ohm F
R922		2253451296	RES,CHIP 1/4	RC 1206 1/4W	5.1Kohm J
R923		2251422106	RES,CHIP 1/4	RC 1206 1/4 W	221 ohm F
R926		2253451296	RES,CHIP 1/4	RC 1206 1/4W	5.1Kohm J
R927		2251439206	RES,CHIP 1/4	RC 1206 1/4 W	392 ohm F
R928		2251422106	RES,CHIP 1/4	RC 1206 1/4 W	221 ohm F
R930		2253410596	RES,CHIP 1/4	RC 3216 1/4W	1.00M J
R931		2253410596	RES,CHIP 1/4	RC 3216 1/4W	1.00M J
R932		2232410095	RES,CBN 1/4	RD 1/4W 10 ohm	J
R933		2232410095	RES,CBN 1/4	RD 1/4W 10 ohm	J
S801		2407412800	SOCKET (AC INLET)	0707-0001	INALWAYS
S802	RA	2407200991	HOLDER,FUSE	CQ-05T (5mm DIA FUSE)	
S802	RB	2407200791	HOLDER,FUSE	FC-05C	
S803	RA	2407200991	HOLDER,FUSE	CQ-05T (5mm DIA FUSE)	
S803	RB	2407200791	HOLDER,FUSE	FC-05C	
T801		2374228002	XFORMER,POWR	ER-28 750uH 40/40Ts/0.36mm	
T901		2374300500	XFORMER INVERTER	EEL-19 20/2000Ts 0.1*20/0.06mm	
T902		2374300500	XFORMER INVERTER	EEL-19 20/2000Ts 0.1*20/0.06mm	
U801		2202129500	PC BOARD	T178KP18 P/B CEM1 199*170	

OTHERS

P951		2427130055	POWER CORD	GERMAN WALL 1.83M	GE96750
P961		2427501173	I/O CABLE	D15/C13 20276(3+6) 1.83M	96750
P962		2427700015	CABLE	EAR 3.5(577C) 1.83M	GE96750
P980		2420308002	FFC CABLE	FFC 30P*0.5*L80mm	
P981		2420308001	FFC CABLE	FFC 50P*0.5*L80mm	
P986		2427307250	LUG W/WIRE	φ4.3/3.2 1007#18 BLK 250mm	
P988		2427404452	WIRE HARNESS	4/2+2P H/A 2651#28 L=450 P=2.5	
V901		2212005201	LCD PANEL	CLAA170EA03	CPT
W601		2391301081	SPEAKER ASS'Y	1W 8ohm 52*19.5*14	(R)
W602		2391301082	SPEAKER ASS'Y	1W 8ohm 52*19.5*14	(L)