

AL512/AL513 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	15.0" TFT
Power Management	Energy Star compliant VESA DPMS compatible < 3W
Displayable Resolution	XGA 1024× 768 (max.)
Pixel Dimension	0.297× 0.297mm
LCD Display Color	16.7M Color Max. (8bit)
Viewing Angle	CR ≥ 10 Horizontal: -60°~+60° Vertical: -55°~+45°
Tilt	+90°, -5°
Contrast Ratio	200 : 1 (min.) 350 : 1 (typ.)
Brightness	200cd/ m ² (min.) 250 cd/m ² (typ.)
Response Time	Tr: 13 ms Tf: 27ms (typ.)
Active Display Area	304.1mm× 228.1mm
Temperature	Operating: 0°C ~ +40°C Storage: -20°C ~ +60°C
Compliance	UL, CSA , DHHS, TÜV, CE, FCC-B, VDE-B, Energy Star.
Power	Input Voltage: 100~240 Vac Consumption: W/O Audio 30Watts (Max.) W/H Audio 35 Watts (Max.)
Audio	1Watt(L) + 1Watt(R)

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3.2. SUPPORTING TIMING CHART

ITEM	1	2	3	4	5
TIMING	720×400@70Hz	640×480@60Hz	640×480@67Hz	640×480@75Hz	800×600@56Hz
Pixel Rate	28.322MHz	25.175MHz	30.240MHz	31.500MHz	36.000MHz
H TOTAL	31.778us	31.778us	28.571us	26.667us	28.444us
H DISPLAY	25.422us	25.422us	21.164us	20.317us	22.222us
H B-Porch	1.907us	1.907us	3.175us	3.810us	3.556us
H Width	3.813us	3.813us	2.116us	2.032us	2.000us
H Border	0.318us	0.318us	0.000us	0.000us	0.000us
V TOTAL	14.268ms	16.683ms	15.000ms	13.334ms	17.778ms
V DISPLAY	12.711ms	15.253ms	13.714ms	12.800ms	17.066ms
V B-Porch	1.112ms	1.049ms	1.114ms	0.427ms	0.626ms
Vs Width	0.064ms	0.064ms	0.086ms	0.080ms	0.057ms
V Border	0.222ms	0.254ms	0.000ms	0.000ms	0.000ms
H/V Sync	-/+	-/-	-/-	-/-	+/+
Interlace	No.	No.	No.	No.	No.

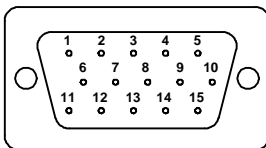
ITEM	6	7	8	9	10
TIMING	800×600@60Hz	800×600@72Hz	800×600@75Hz	832×624@74.5Hz	1024×768@60Hz
Pixel Rate	40.000MHz	50.000MHz	48.500MHz	57.280MHz	65.000MHz
H TOTAL	26.400us	20.800us	21.333us	20.112us	20.677us
H DISPLAY	20.000us	16.000us	16.162us	14.525us	15.754us
H B-Porch	2.200us	1.280us	3.232us	3.771us	2.462us
H Width	3.200us	2.400us	1.616us	1.118us	2.092us
H Border	0.000us	0.000us	0.000us	0.000us	0.000us
V TOTAL	16.579ms	13.853ms	13.333ms	13.417ms	16.666ms
V DISPLAY	15.840ms	12.480ms	12.800ms	12.552ms	15.880ms
V B-Porch	0.607ms	0.478ms	0.448ms	0.784ms	0.600ms
Vs Width	0.106ms	0.125ms	0.064ms	0.060ms	0.124ms
V Border	0.000ms	0.000ms	0.000ms	0.00ms	0.000ms
H/V Sync	+/+	+/+	+/+	-/-	-/-
Interlace	No.	No.	No.	No.	No.

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ITEM	11	12	13	14	15
TIMING	1024×768@70Hz	1024×768@75Hz			
Pixel Rate	75.000MHz	78.750MHz			
H TOTAL	17.707us	16.660us			
H DISPLAY	13.653us	13.003us			
H B-Porch	1.920us	2.235us			
H Width	1.813us	1.219us			
H Border	0.000us	0.000us			
V TOTAL	14.272ms	13.328ms			
V DISPLAY	13.599ms	12.795ms			
V B-Porch	0.513ms	0.466ms			
Vs Width	0.106ms	0.050ms			
V Border	0.000ms	0.000ms			
H/V Sync	-/-	+/+			
Interlace	No.	No.			

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

(AL512/AL513)

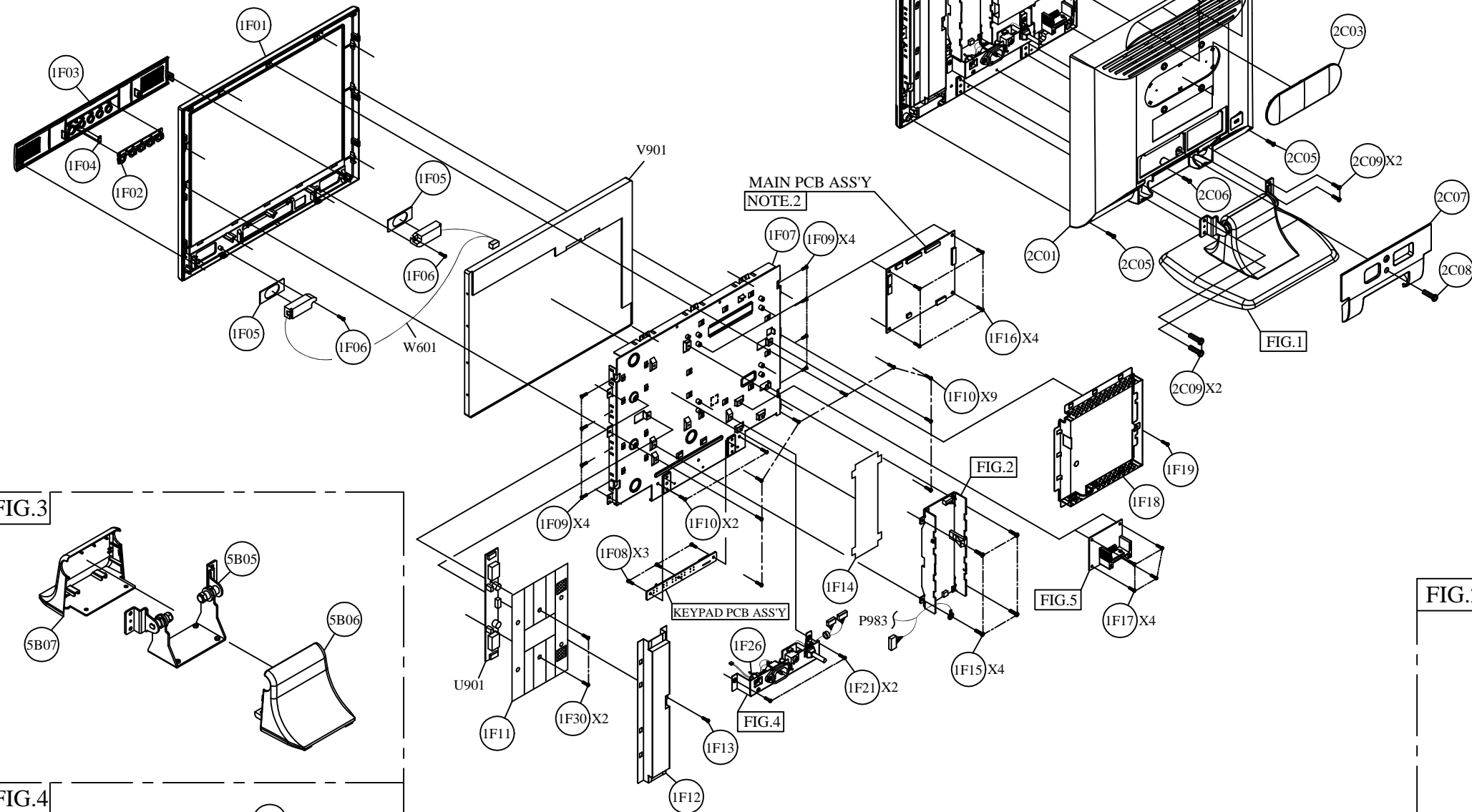


FIG.1

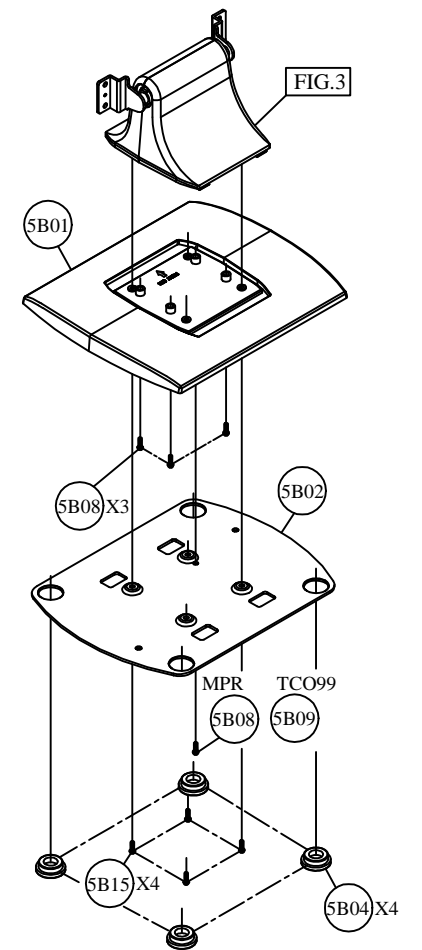
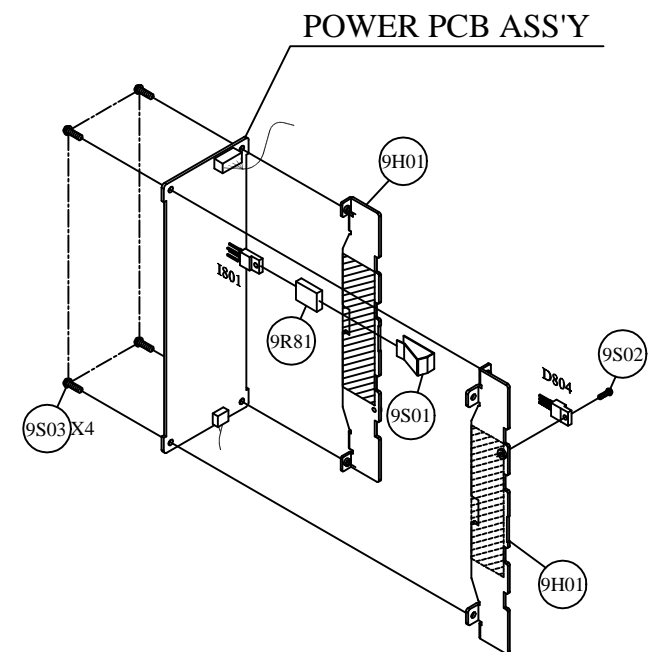


FIG.2



NOTE.1

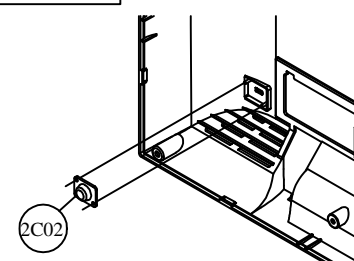
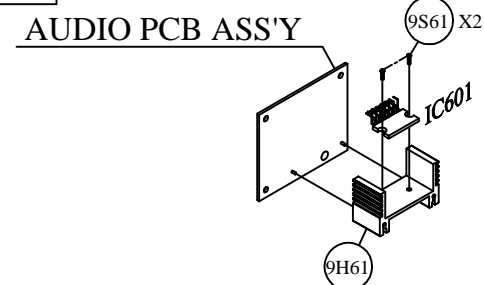


FIG.5



AUDIO PCB ASS'Y

(9S61) X2

POWER PCB ASS'Y

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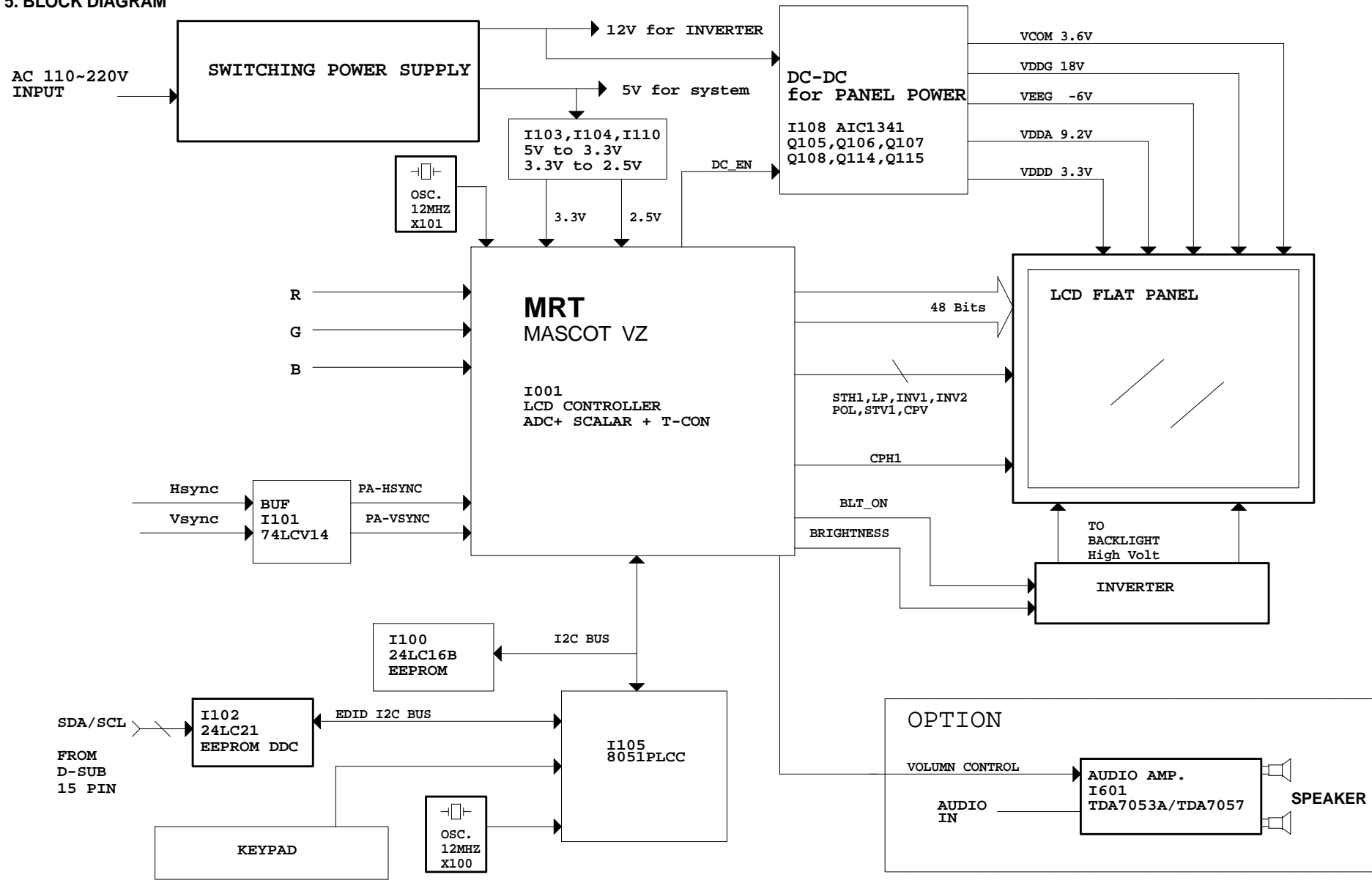
4.2. EXPLODED VIEW PARTS LIST

Ref. No.	Source	Part No.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1F01		2024263501	FRONT BEZEL	AL512 ABS 94V0 860027	1	MPR II
1F01		2024263503	FRONT BEZEL	AL513 ABS+PC 94V0 860027	1	TCO99
1F02		2044263101	FUNCTION KEY	AL512 ABS 94HB PS-7604B	1	
1F03		2054254101	ORNAMENT	DOOR PANEL ABS 94HB 860027	1	AL512
1F03		2054254001	ORNAMENT	DOOR PANEL ABS 94HB 860027	1	AL513
1F04		2053752701	LED INDIC.-PWR	JT166AL LED LENS PMMA 94HB	1	
1F05		2061252400	SPONGE	36X23X3t EVA	2	AL512 Only
1F06		2084730082	SCREW,BND T+	M3X8(BND T+)	2	AL512 Only
1F07		2071859101	SHIELD PLATE	JT166L14 SECC t=1. 0(LCD B'KT)	1	
1F08		2082730062	SCREW,BND+	M3X6(BND+)	3	
1F09		2080002200	SCREW,SPE	L355 M3x6 DH NICKEL-PLATED	8	
1F10		2084730082	SCREW,BND T+	M3X8(BND T+)	11	
1F11		2072450100	INSULATOR	JT166E PC 185LX25.3WX14.6HX.2t	1	
1F12		2071659501	SHIELD PLATE	SPTE t=0.3mm	1	
1F13		2082730062	SCREW,BND+	M3X6(BND+)	1	
1F14		2072451900	INSULATOR	NYLAR t=0.2mm 94V0	1	
1F15		2085730062	SCREW,B OTW+	3X6(+) SWRM-3 ZMC2-C	4	
1F16		2082730062	SCREW,BND+	M3X6(BND+)	4	
1F17		2082730062	SCREW,BND+	M3X6(BND+)	4	
1F18		2071664200	BRACKET,FIX	JT166L14/SPTE 0.3t MAIN BOARD	1	
1F19		2082730062	SCREW,BND+	M3X6(BND+)	1	
1F20		2071960200	METAL FITTG	L355 SECC t=0.8	1	
1F21		2085730082	SCREW,B OTW+	SCREW B OTW+ M3X8	2	
1F22		2085740082	SCREW,B OTW+	SCREW B OTW+ M4X8	1	
1F23		2085740082	SCREW,B OTW+	SCREW B OTW+ M4X8	1	
1F24		2080002300	SCREW,SPE	L355 M3*8 DH NICKEL-PLATED	2	
1F25		2082730062	SCREW,BND+	M3X6(BND+)	2	AL512 Only
1F26		2074191000	HOLDER	JK1461 JEAN	1	
1F30		2084730062	SCREW,BND T+	M3X6(BND T+)	2	
2C01		2022259110	CABI BACK	BACK ABS 94V0 860027	1	MPR II
2C01		2022259113	CABI BACK	BACK ABS+PC 94V0 860027	1	TCO99
2C02		2071958300	METAL FITTG	VE170 KENSINGTON	1	
2C03		2054252605	ORNAMENT	DUMMY LOGO ABS 94HB 860027	1	
2C04		2082630067	SCREW	M3X6 P=0.5 ZN WHITE	2	
2C05		2084740107	SCREW,BND T+	M4X1φ BND T+ ZN WHITE	2	
2C06		2084730082	SCREW,BND T+	M3X8(BND T+)	1	
2C07		2027255509	DUST COVER	BACK COVER ABS 94V0 860027	1	AL512 MPR II
2C07		2027255511	DUST COVER	CACK COVER ABS+PC 94V0 860027	1	AL512 TCO99
2C07		2027256406	DUST COVER	BACK PLATE ABS 94V0 860027	1	AL513 MPR II
2C07		2027256408	DUST COVER	BACK PLATE ABS+PC 94V0 860027	1	AL513 TCO99
2C08		2082630067	SCREW	M3X6 P=0.5 ZN WHITE	1	
2C09		2085740082	SCREW,B OTW+	SCREW B OTW+ M4X8	4	AL512
2C09		2085740086	SCREW,B OTW+	M4X8 B SPW+ φ 3. 96 NYLON	4	AL513
5B01		2028255701	STAND	AL512 STAND ABS 94HB 860027	1	
5B02		2071963400	METAL FITTG	AL512 STAND PLATE SECC t=1.0mm	1	TCO99 Only
5B04		2039802301	FOOT PAD	CR 420xφ16.5x5.8	4	
5B05		2106653100	HINGE	JT166L HINGE -5'~20' W/ LOCK	1	
5B06		2027255407	DUST COVER	STAND BACK ABS 94HB 860027	1	

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Ref. No.	Source	Part No.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
5B07		2027255607	DUST COVER	STAND FRONT ABS 94HB 860027	1	
5B08		2085740162	SCREW,B OTW+	4x16(+) SWRM-3 ZMC2-C	4	MPR II
5B08		2085740162	SCREW,B OTW+	4x16(+) SWRM-3 ZMC2-C	3	TCO99
5B09		2085740202	SCREW,B OTW+	PM4*20	1	TCO99 Only
5B15		2084740082	SCREW,BND T+	M4X8(BND T+)	4	
9H01		2072258100	HEAT SINK	AL-6063S t=1.5mm	2	
9H61		2072250100	HEAT SINK	A6063S-T5	1	AL512 Only
9R81		2429150100	TUBE,SILICON	JT156D2 TO-220ST 0.4mm	1	
9S01		2105250700	SPRING PLATE	SUS 301	1	
9S02		2084730082	SCREW,BND T+	M3X8(BND T+)	1	
9S03		2084730082	SCREW,BND T+	M3X8(BND T+)	4	
9S61		2084730102	SCREW,BND T+	M3X10(BND T+)	2	AL512 Only

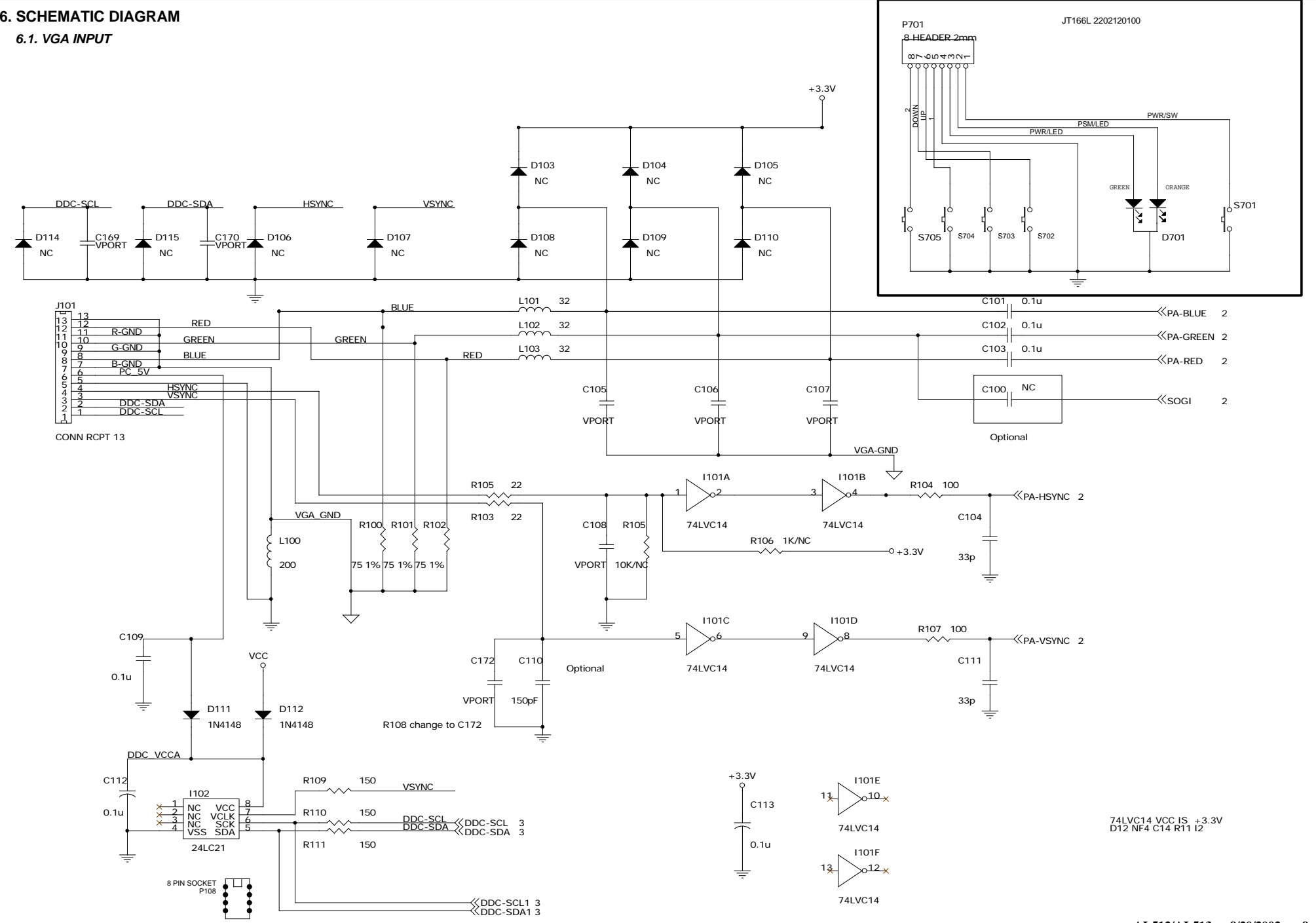
5. BLOCK DIAGRAM



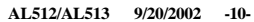
15 inch LCD MONITOR BLOCK DIAGRAM

6. SCHEMATIC DIAGRAM

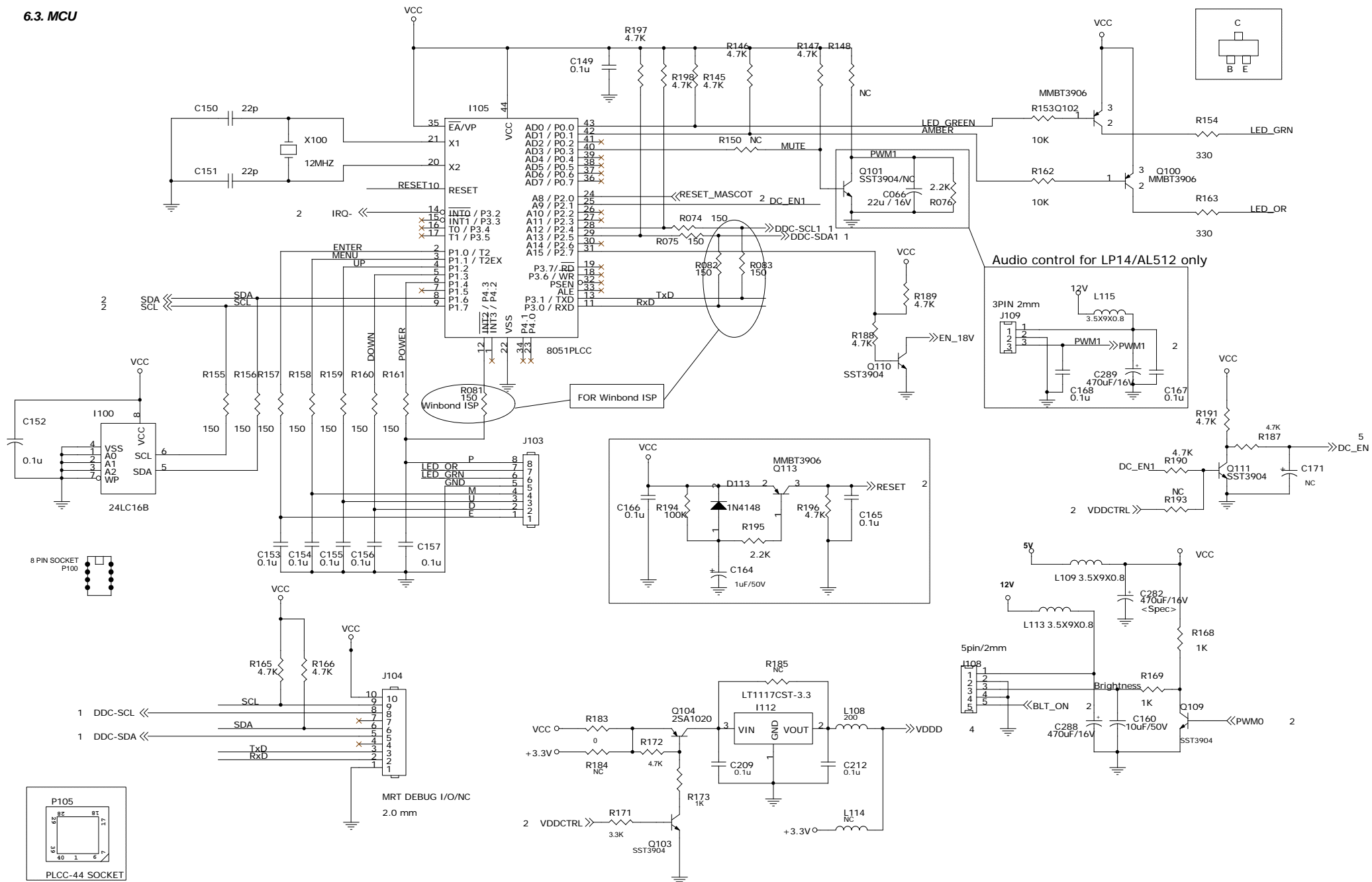
6.1. VGA INPUT



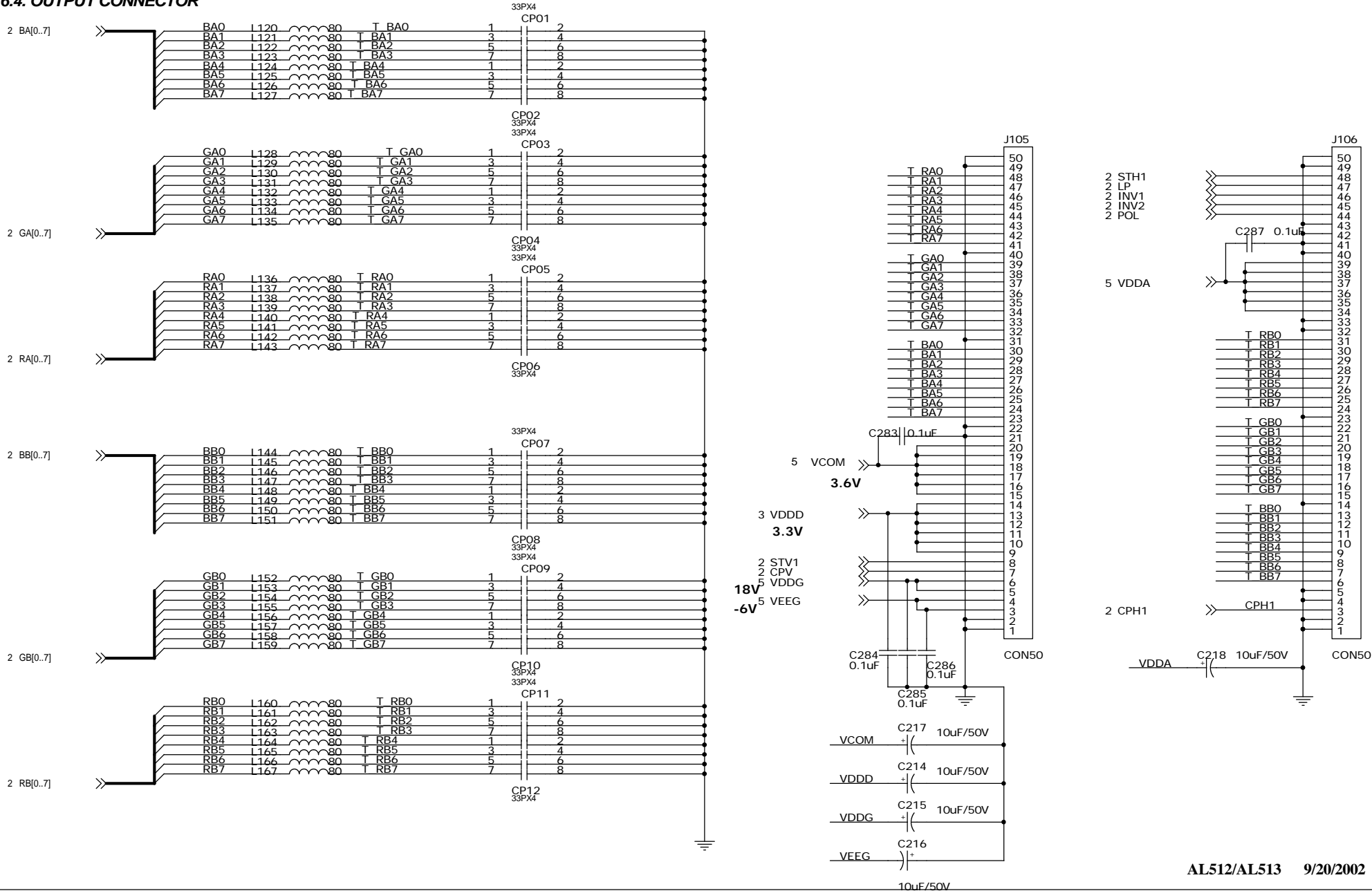
6.2. MVZ



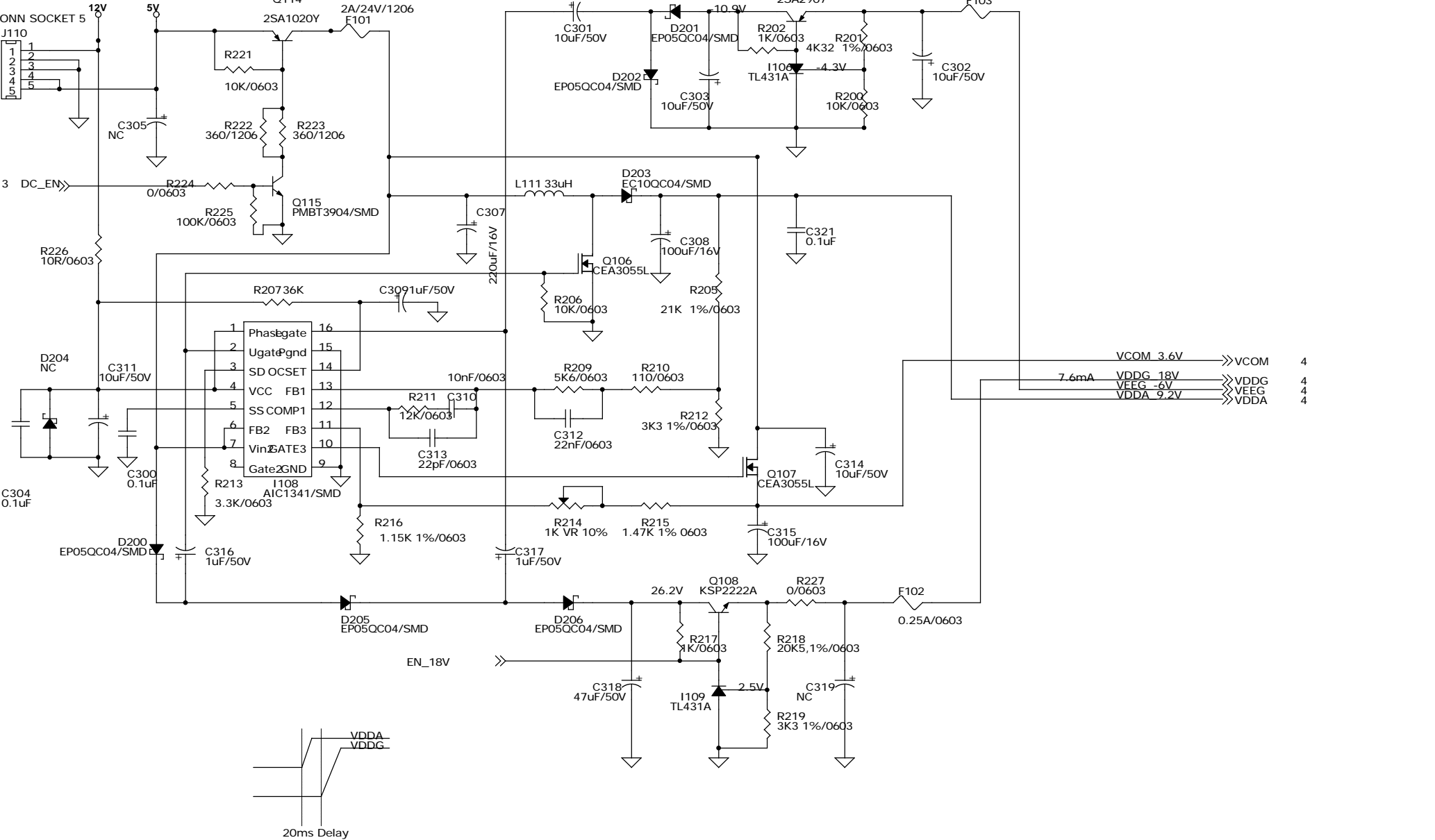
6.3. MCU



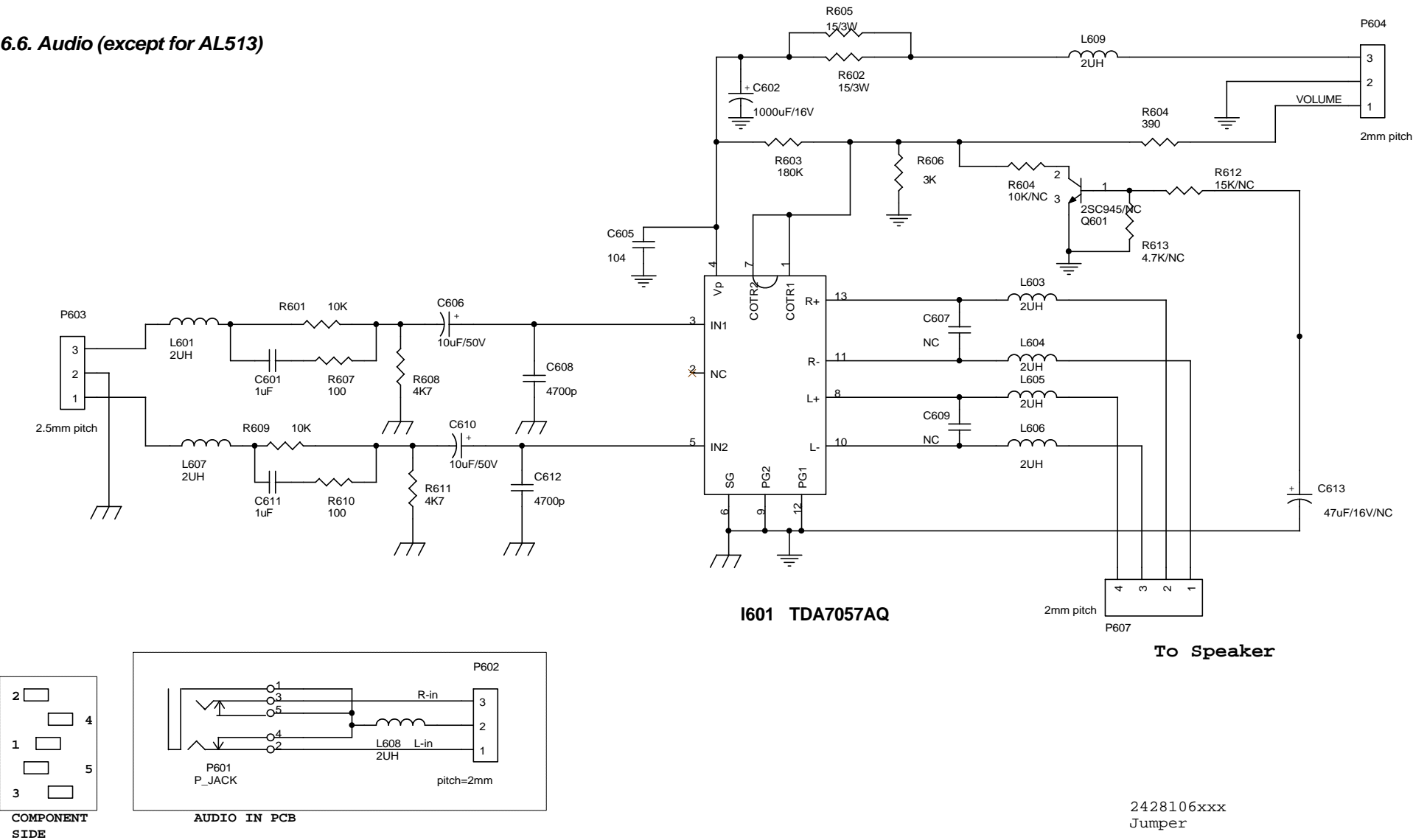
6.4. OUTPUT CONNECTOR



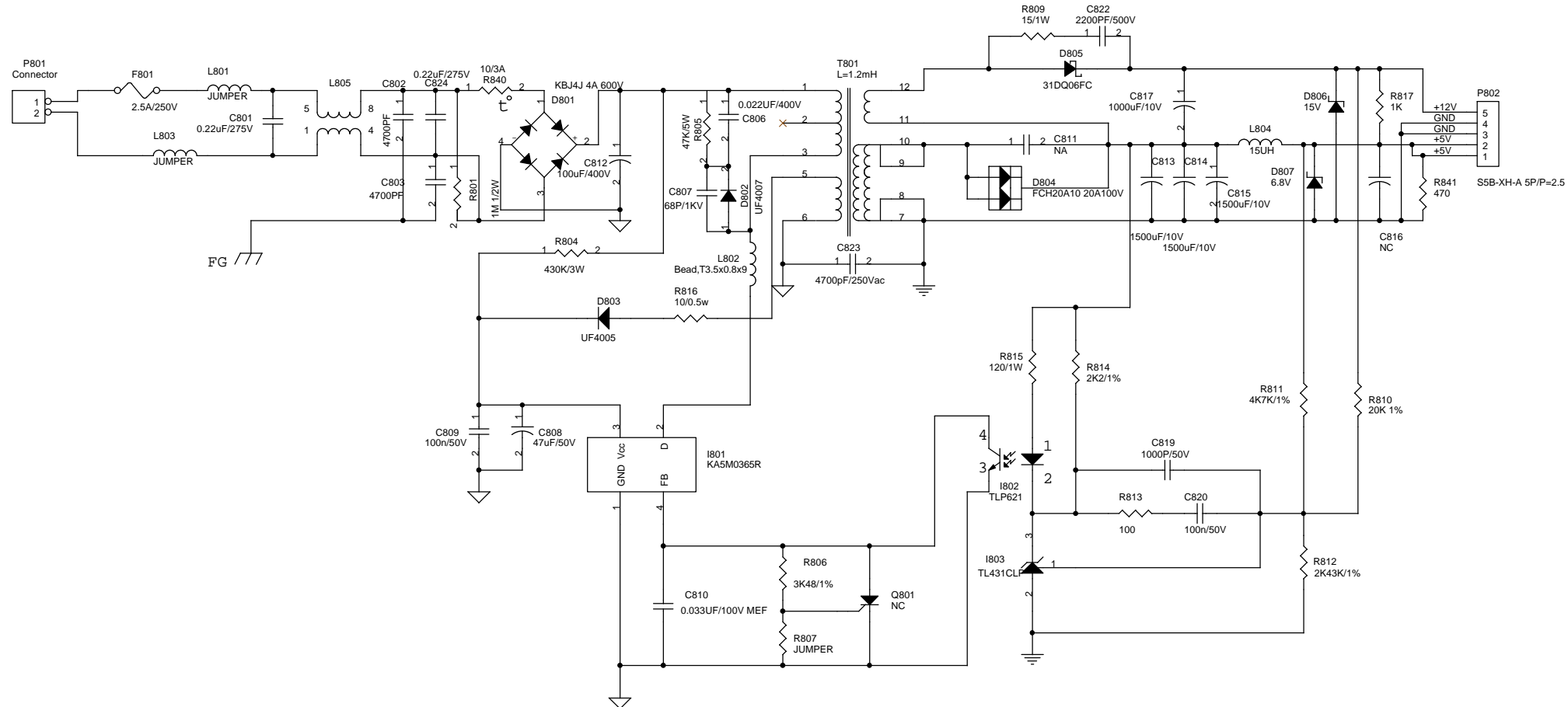
6.5. Penel Power



6.6. Audio (except for AL513)



6.7. AC-DC Power



(1) Resistor - power rating is 1/8W , if not indicated.
(2) AL-EL capacitor - temperture is 105'C , if not indicated.

7. WORKING THEOREM

A. DC-DC CONVERTER

This block provides adjustable output voltages of 9.2V, -6V, 18V and 3 to 4V for the panel.

It consists of a Q114 transistor and power switch IC I108 (AIC 1526-1).

When DC_EN signal is high, then Q114 is activated and send one signal to activate I108.

At this time I108 will send 200KHz 12V PWM to Q106, Which is connected with L111, Q106, D203 and C308, to boost 5V to 9.2V. And I108 offers the adjustable voltage of 3V to 4V. By sending out pulses from pin 2 and pin 16 of I108 to double voltage circuit consisting of C301, D201, D202 and C303, leaner regulator with Q105, would output -6V, 18V output id created, according to the rule of -6V creation.

B. Scaling controller

MascotV scalar is a highly integrated solution that combines a high performance ADC with an advanced image processing controller. Using advanced image scaling algorithms, Mascot V has intelligently adaptive sub-algorithms that will automatically optimize the display quality for different images – the text is sharper and the graphics is smoother. The built-in analog interface includes a 160Mhz, 8-bit 3-channel ADC, preamplifier, and VGA, allowing seamless support to resolutions from VGA to XGA. MascotV also offers other integrated functions such as an internal OSD that supports all languages, and build-in line buffers that allows support to a wide range of LCD panels.

The scalar implements four advanced display technologies:

1. Sampling RGB input signals by fully integrated triple-channel ADC, PLL, and pre-amplifier
2. Automatically calibrate for vertical and horizontal alignment to center display and phase calibration
3. High-quality advanced scaling: Enhanced and adaptive scaling algorithm for optimal image quality
4. One and two pixels per clock panel support: Up to 24 bits per pixel.

The panel interface consists of 48-bit panel data bus, Start Pulse(STH1) and Clock (CLKH), Polarity(POL)/Latch pulse(LP) for source driver IC, Start pulse(STV1) and Clock(CLKV) for gate driver IC, and Data inversion control(HMSO/HMSE) for odd/even pixel bus and the power supply (+3.2V, +3.45V<adjustable>,+9.2V, +18Vand-6V) for panel driver IC use.

C. Inverter

In order to drive the CCFLs embedded in the panel module, there is a ROYER inverter to convert to convert

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, buck choke, and switching MOSFET to convert DC input into AC output.

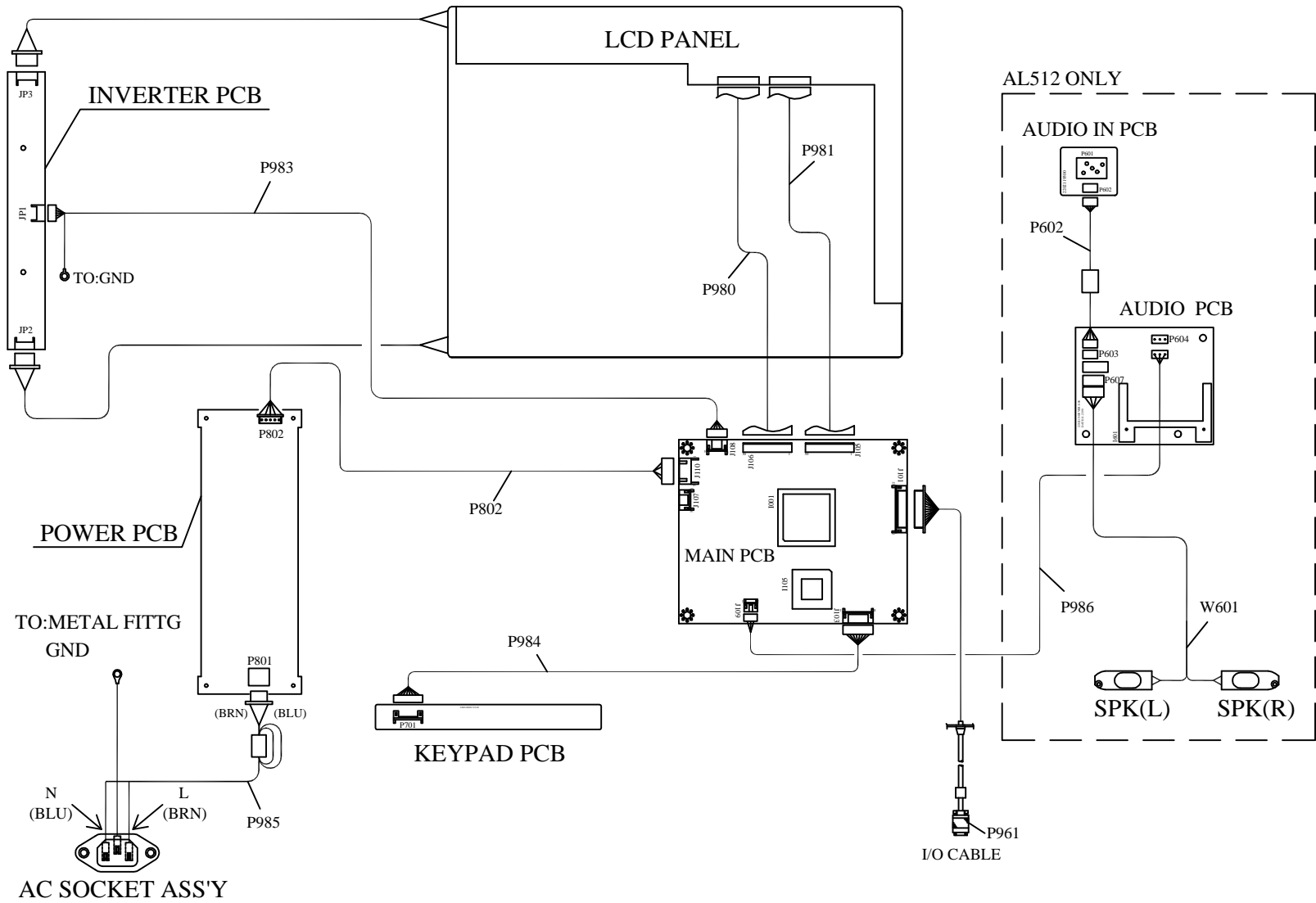
The output stage consists of a tuning capacitor, transformer, push-pull transistor pair to boost ac output up to hundreds of voltage.

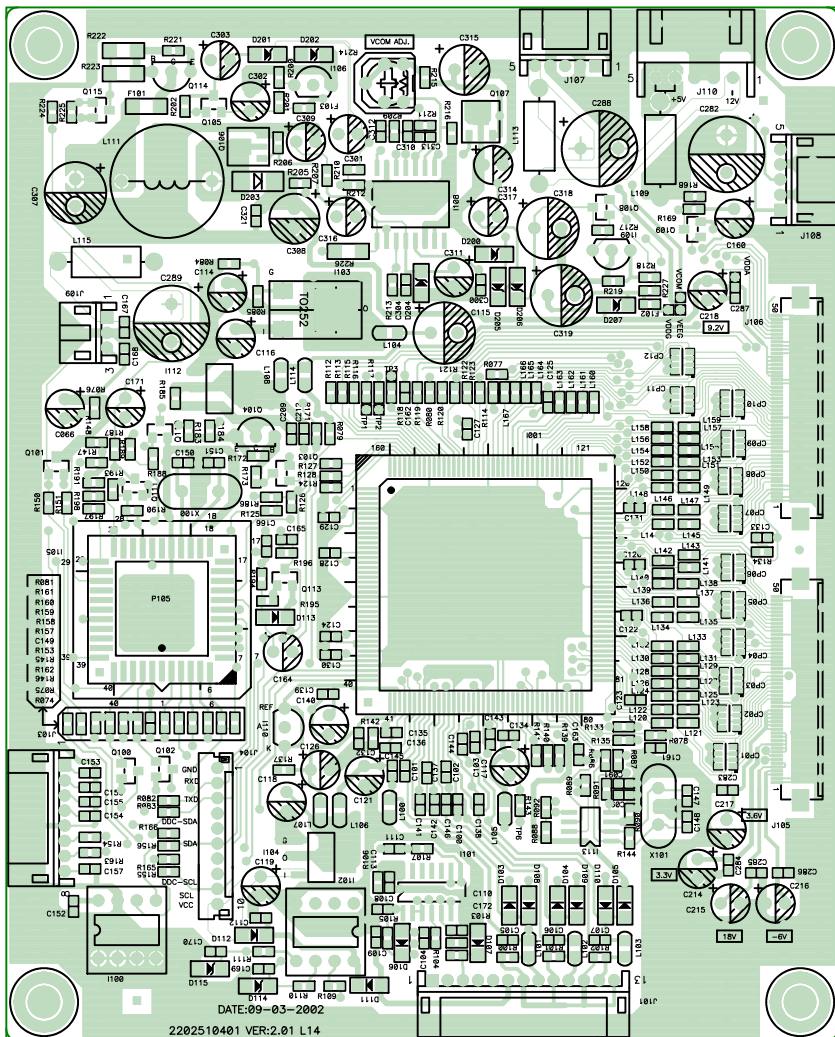
And one resistor is serial to lamp for output current feedback.

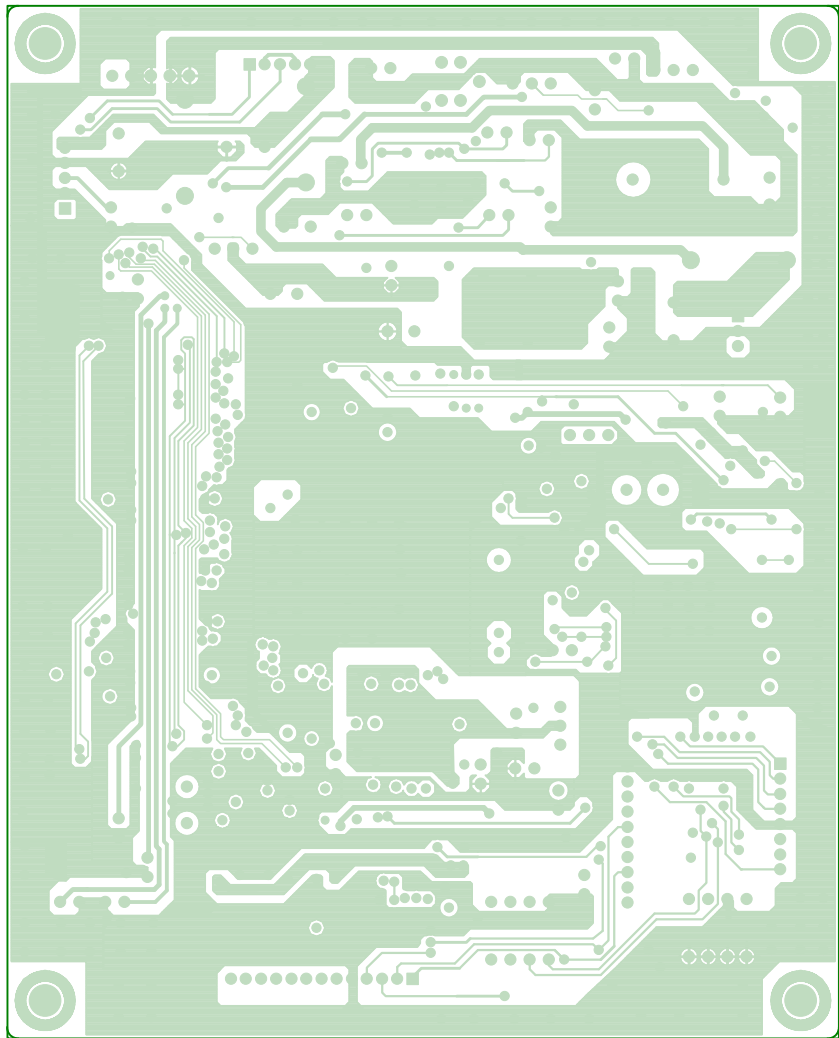
A 5-pin connector is the only interface to control the inverter. Pin 1 is 12V input, Pin 2/4 is the returns, pin3 is the control of output current, and pin 5 is the enable/disable control.

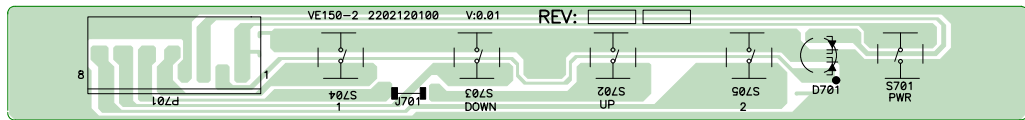
8. WIRING DIAGRAM

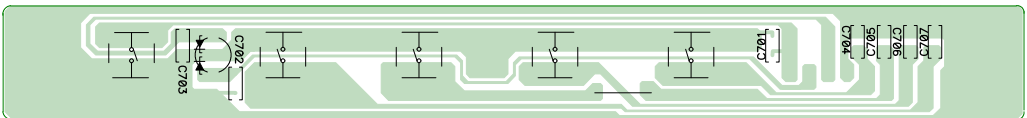
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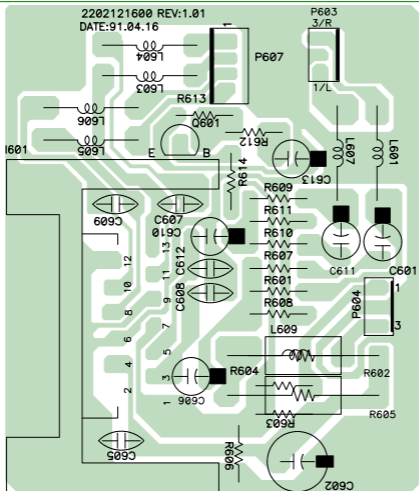








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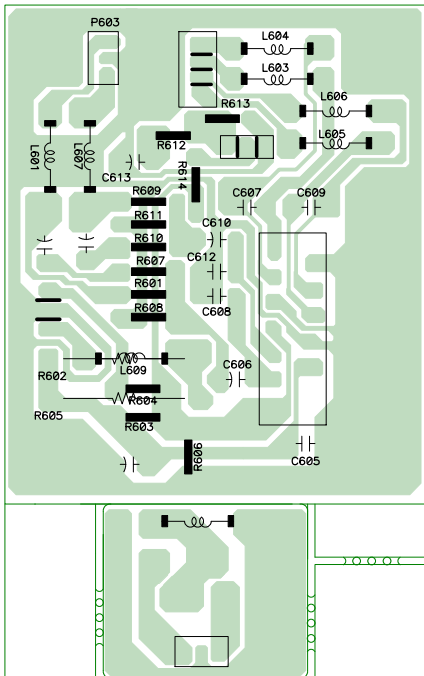
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P601

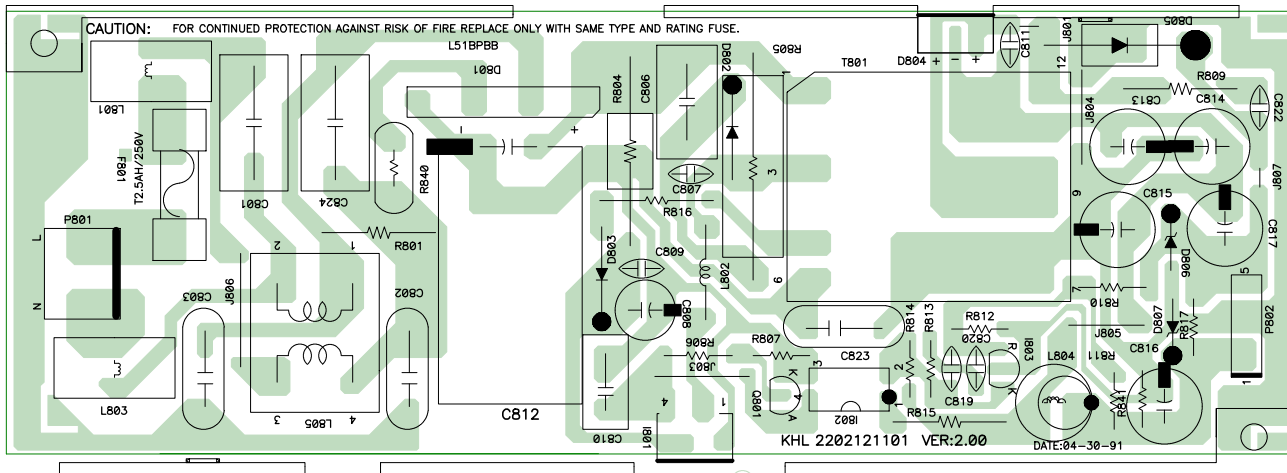


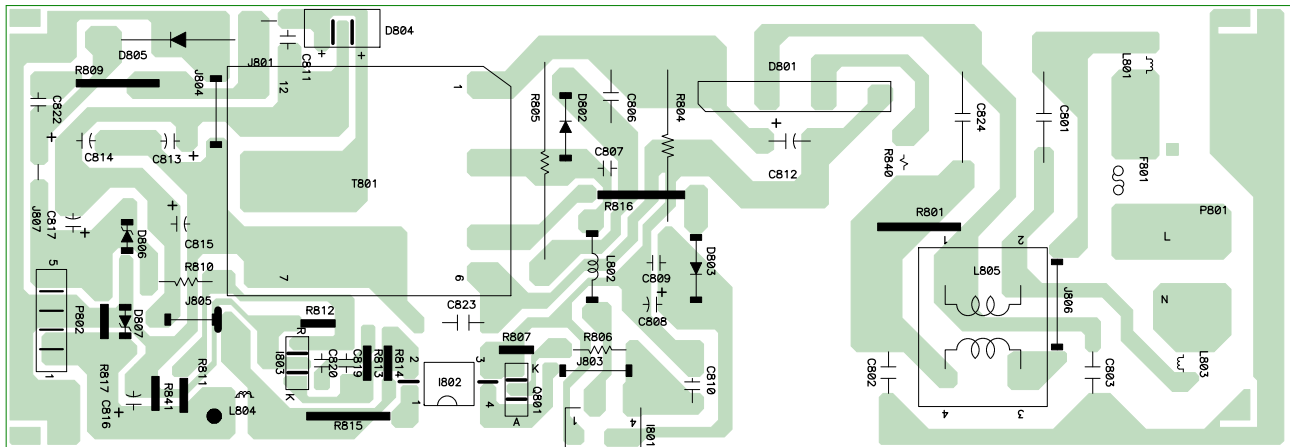
3/R

P602
1/L



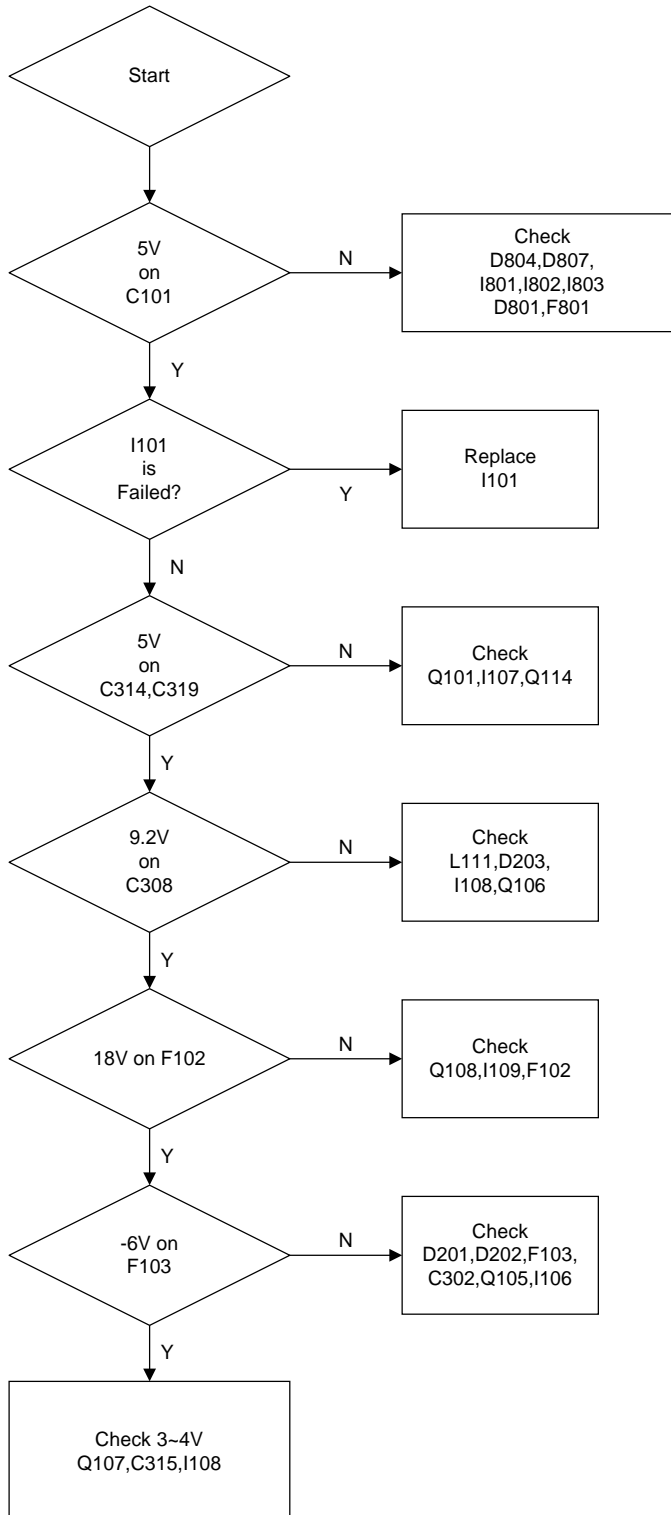
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE ONLY WITH SAME TYPE AND RATING FUSE.



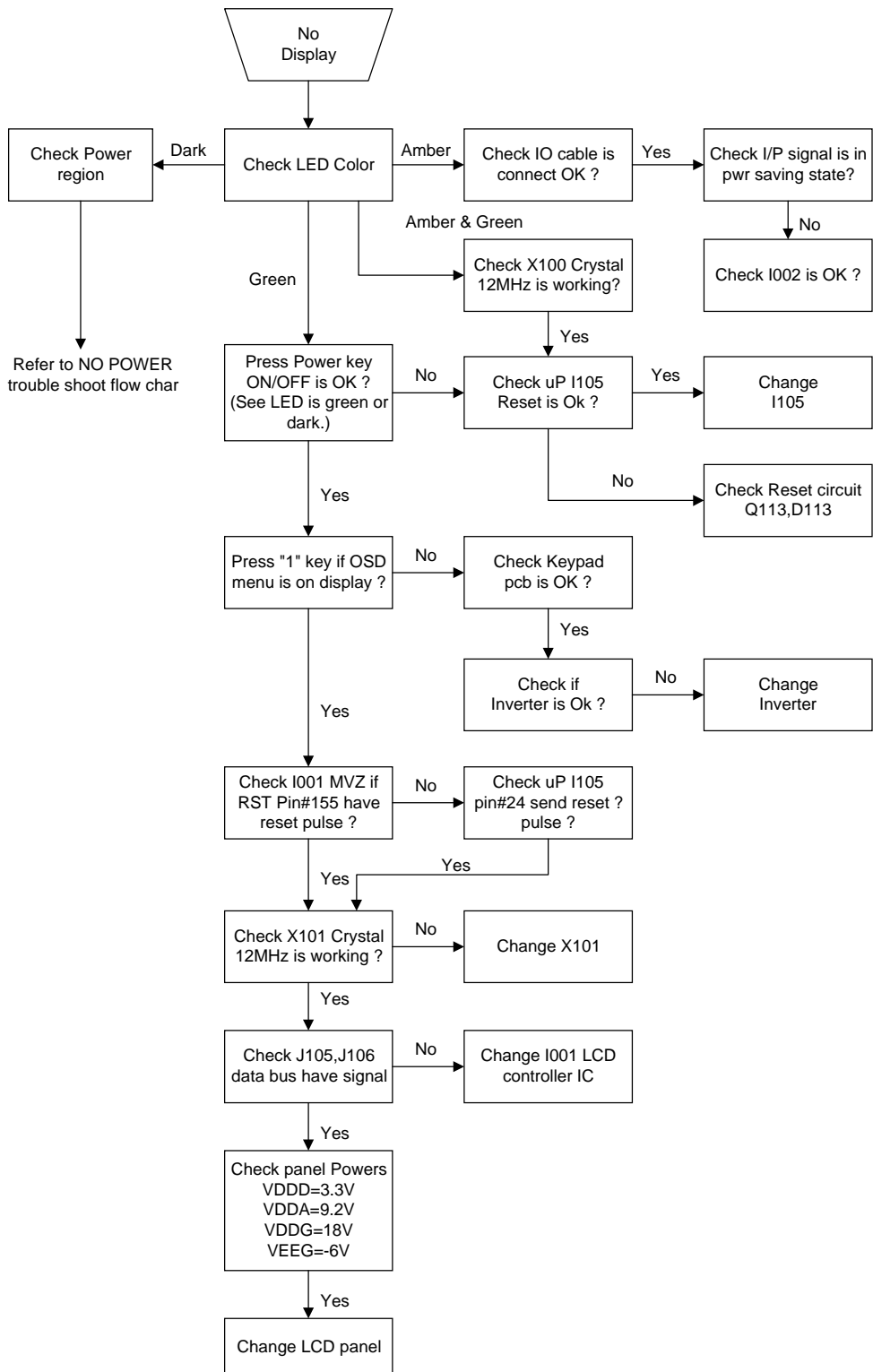


10. TROUBLE SHOOTING FLOW CHART

10.1. NO POWER

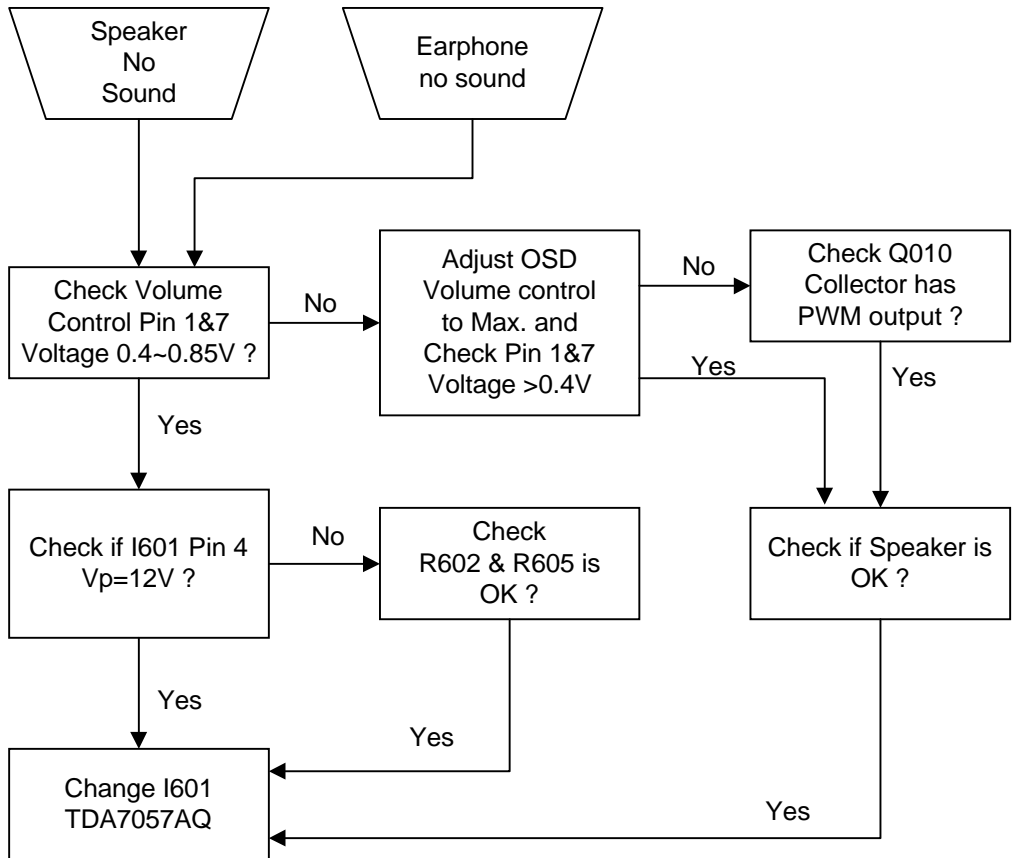


10.2. NO DISPLAY



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10.3. NO SOUND



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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.	V-com Voltage	R124 (VCOM ADJ)
2.	Eeprom Initial	Function Key
3.	White Balance	Function Key
4.	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 V-com Voltage:

- A. Timing : 1024x768@60Hz.
- B. Pattern : The picture of “ Shut down windows” or Full screen pixel ON/OFF pattern.
- C. Adjust R124 to let the center of the screen no flash.

2. Eeprom Initial:

- A. Timing : 1024x768@60Hz.
- B. Pattern : Cross hatch.
- C. Switch off the power and press the “▲” and “ 2 ” key simultaneously, then switch on the power. At this time we can enter into the factory mode when press the “1”key.
- D. Select the “EEPROM INIT” item and press “2”key to reset the Eeprom.

3. White Balance Adjustment :

- A. Timing : 1024x768@60Hz.
- B. Pattern : Full white.
- C. Set CA110 color analyzer at the center of screen and along a perpendicular to the screen at 20cm from the display.
- D. Move “▼” key to select the “ WHITE BALANCE” item in the factory mode and press “2”key, then the white balance will be auto dadjusted.
- E. Color temperature verification: (Set Brightness and Contrast to Maximum)

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- (1) 6500K verify : press “▼”, “▲” key to move cursor to 6500K at factory mode and press “” key, and then check the color temperature is

$$x=0.310 \pm 0.03$$

$$y=0.330 \pm 0.03$$

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

- (2) 9300K verify : press “▼”, “▲” key to move cursor to 9300K at factory mode and press “” key, and then check the color temperature is

$$x=0.283 \pm 0.03$$

$$y=0.298 \pm 0.03$$

4. Geometry:

- A. Pattern : Cross hatch
- B. Change each mode on the timing table in turns and excute the “Auto Adjust “ function on the OSD menu , then all the data of the each mode will be auto saved after finish the “Auto Adjust “ function.
- C. Until all of modes are agjusted, press “” “ to exit OSD menu and switch power 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							
CP01		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP02		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP03		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP04		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP05		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP06		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP07		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP08		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP09		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP10		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP11		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
CP12		2340733008	CAP,ARRAY P=0.8 85°C	1206Y5V	33.000PF	16V	M
C066		2336322601	CAP,MINI ELE 105°C	22uF/16V	⌀ 4*7	P=1.5	(AL512 Only)
C090		2341168196	CAP,CHIP 125°C	1608COG	680.000PF	50V	J
C091	RA	2341168296	CAP,CHIP 125°C	1608COG	6800.000PF	50V	J
C091	RB	2346168296	CAP,CHIP 125°C	1608X7R	6800.000PF	50V	K
C101		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C102		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C103		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C104		2341133096	CAP,CHIP 125°C	1608COG	33.000PF	50V	J
C105		2364000296	DIODE,SPEC	EGA 1 0603	V05A		INPAQ
C106		2364000296	DIODE,SPEC	EGA 1 0603	V05A		INPAQ
C107		2364000296	DIODE,SPEC	EGA 1 0603	V05A		INPAQ
C108		2349900996	CAP,CHIP SPEC	0603VPORT	10P+-10%		INPAQ
C109		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C110		2341115196	CAP,CHIP 125°C	1608COG	150.000PF	50V	J
C111		2341133096	CAP,CHIP 125°C	1608COG	33.000PF	50V	J
C112		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C113		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C114		2333322601	CAP,ELE 105°C	22uF/16V	⌀ 5*11	P=2.0	
C115		2333322701	CAP,ELE 105°C	220uF/16V	⌀ 6.3*11	P=2.5	
C116		2333322601	CAP,ELE 105°C	22uF/16V	⌀ 5*11	P=2.0	
C117		2336610601	CAP,MINI ELE 105°C	10uF/50V	⌀ 5*7	P=2.0	
C118		2336322601	CAP,MINI ELE 105°C	22uF/16V	⌀ 4*7	P=1.5	
C119		2336322601	CAP,MINI ELE 105°C	22uF/16V	⌀ 4*7	P=1.5	
C120		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C121		2336610601	CAP,MINI ELE 105°C	10uF/50V	⌀ 5*7	P=2.0	
C122		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C123		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C124		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C125		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C126		2336610601	CAP,MINI ELE 105°C	10uF/50V	⌀ 5*7	P=2.0	
C127		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C128		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C129		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C130		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C131		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C132		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C134		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C135		2341115196	CAP,CHIP 125°C	1608COG	150.000PF	50V	J
C136		2346156296	CAP,CHIP 125°C	1608X7R	5600.000PF	50V	K
C137		2346110396	CAP,CHIP 125°C	1608X7R	0.010UF	50V	K
C138		2346147296	CAP,CHIP 125°C	1608X7R	4700.000PF	50V	K
C139		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION			REMARK
C140		2336610601	CAP,MINI ELE 105°C	10uF/50V	§ 5*7	P=2.0	
C141		2346147296	CAP,CHIP 125°C	1608X7R	4700.000PF	50V	K
C142		2346110396	CAP,CHIP 125°C	1608X7R	0.010UF	50V	K
C143		2346147296	CAP,CHIP 125°C	1608X7R	4700.000PF	50V	K
C144		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C145		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C146		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C147		2341122096	CAP,CHIP 125°C	1608COG	22.000PF	50V	J
C148		2341122096	CAP,CHIP 125°C	1608COG	22.000PF	50V	J
C149		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C150		2341122096	CAP,CHIP 125°C	1608COG	22.000PF	50V	J
C151		2341122096	CAP,CHIP 125°C	1608COG	22.000PF	50V	J
C152		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C153		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C154		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C155		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C156		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C157		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C160		2336610601	CAP,MINI ELE 105°C	10uF/50V	§ 5*7	P=2.0	(AL512 Only)
C161		2341122096	CAP,CHIP 125°C	1608COG	22.000PF	50V	J
C163		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C164		2336610501	CAP,MINI ELE 105°C	1uF/50V	§ 4*7	P=1.5	
C165		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C166		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C167		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C168		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C169		2349900996	CAP,CHIP SPEC	0603VPOR	T 10P+-10%		I
C170		2349900996	CAP,CHIP SPEC	0603VPOR	T 10P+-10%		I
C172		2349900996	CAP,CHIP SPEC	0603VPOR	T 10P+-10%		I
C209		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C212		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C214		2336610601	CAP,MINI ELE 105°C	10uF/50V	§ 5*7	P=2.0	
C215		2336610601	CAP,MINI ELE 105°C	10uF/50V	§ 5*7	P=2.0	
C216		2336610601	CAP,MINI ELE 105°C	10uF/50V	§ 5*7	P=2.0	
C217		2336610601	CAP,MINI ELE 105°C	10uF/50V	§ 5*7	P=2.0	
C218		2336610601	CAP,MINI ELE 105°C	10uF/50V	§ 5*7	P=2.0	
C282		2333347701	CAP,ELE 105°C	470uF/16V	§ 10*12.5	P=5.0	
C283		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C284		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C285		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C286		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C287		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C288		2336347701	CAP,MINI ELE105°C	470UF/16V	§ 8*9	P=3.5	
C289		2333347701	CAP,ELE 105°C	470uF/16V	§ 10*12.5	P=5.0	(AL512 Only)
C300		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C301		2333610601	CAP,ELE 105°C	10uF/50V	§ 5*11	P=2.0	
C302		2333610601	CAP,ELE 105°C	10uF/50V	§ 5*11	P=2.0	
C303		2333610601	CAP,ELE 105°C	10uF/50V	§ 5*11	P=2.0	
C304		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
C307		2336322701	CAP,MINI ELE105°C	220uF/16	V § 8*9	P3.5	
C308		2335310711	CAP,ELE LOW ESR	100uF 16V	§ 6.3*11	P=2.5	
C309		2333610501	CAP,ELE 105°C	1uF/50V	§ 5*11	P=2.0	
C310		2346110396	CAP,CHIP 125°C	1608X7R	0.010UF	50V	K
C311		2333610601	CAP,ELE 105°C	10uF/50V	§ 5*11	P=2.0	
C312		2346122396	CAP,CHIP 125°C	1608X7R	0.022UF	50V	K
C313		2341122096	CAP,CHIP 125°C	1608COG	22.000PF	50V	J
C314		2333610601	CAP,ELE 105°C	10uF/50V	§ 5*11	P=2.0	
C315		2336310701	CAP,MINI ELE105°C	100uF/16V	§ 6.3*7	P=2.5	
C316		2333610501	CAP,ELE 105°C	1uF/50V	§ 5*11	P=2.0	
C317		2333610501	CAP,ELE 105°C	1uF/50V	§ 5*11	P=2.0	
C318		2333647601	CAP,ELE 105°C	47uF/50V	§ 8*11	P=3.5	
C321		2346410496	CAP,CHIP 85°C	1608Y5V	0.100UF	50V	Z
D111		2364200896	DIODE,RECT(SMD)	BAS32L		PHILIPS	

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION		REMARK
D112		2364200896	DIODE,RECT(SMD)	BAS32L	PHILIPS	
D113		2364200896	DIODE,RECT(SMD)	BAS32L	PHILIPS	
D200	RA	2364300896	DIODE,Schottky(SMD)	EP05Q04-TE8L 0.4A/40V	NI	
D200	RB	2364301396	DIODE,Schottky(SMD)	SS0540	PEC	
D201	RA	2364300896	DIODE,Schottky(SMD)	EP05Q04-TE8L 0.4A/40V	NI	
D201	RB	2364301396	DIODE,Schottky(SMD)	SS0540	PEC	
D202	RA	2364300896	DIODE,Schottky(SMD)	EP05Q04-TE8L 0.4A/40V	NI	
D202	RB	2364301396	DIODE,Schottky(SMD)	SS0540	PEC	
D203	RA	2364201496	DIODE,RECT(SMD)	EC10QS04-TE12L	NI	
D203	RB	2364301296	DIODE,Schottky(SMD)	SSM14	CHENMKO SMA	
D205	RA	2364300896	DIODE,Schottky(SMD)	EP05Q04-TE8L 0.4A/40V	NI	
D205	RB	2364301396	DIODE,Schottky(SMD)	SS0540	PEC	
D206	RA	2364300896	DIODE,Schottky(SMD)	EP05Q04-TE8L 0.4A/40V	NI	
D206	RB	2364301396	DIODE,Schottky(SMD)	SS0540	PEC	
F101		2213620204	FUSE SMD	KE20 DC24V 2A(3216)	DAITO	
F102	RA	2213625801	FUSE SMD	0.25A 50V KMD025 0603	DAITO	
F102	RB	2213625802	FUSE SMD	0.25A 32V LF-0434.250	LITTEL	
F103	RA	2213625801	FUSE SMD	0.25A 50V KMD025 0603	DAITO	
F103	RB	2213625802	FUSE SMD	0.25A 32V LF-0434.250	LITTEL	
I001		2365924596	IC,DIGITAL SMD	MASCOT VZ	MRT 160P PQFP	
I100	RA	2365316200	IC,LINEAR	24LC16B	MICROCHI	
I100	RB	2365424000	IC,DIGITAL	AM24LC16(PDIP-8L)	ATC	
I101	RA	2365921996	IC,DIGITAL SMD	SN74LVC14AD	TI	
I101	RB	2365922496	IC,DIGITAL SMD	74LVC14A	PHILIPS SO14	
I102	RA	2365412600	IC,DIGITAL	24LC21A/P	MICROCHIP	
I102	RB	2365407610	IC,DIGITAL	AT24C21-10PC	ATMEL	
I103		2365808996	IC,LINEAR(SMD)	AP1117D33A	ATC TO252	
I104	RA	2365807196	IC,LINEAR(SMD)	AMC1117-3.3ST	ADD TO223	
I104	RB	2365808196	IC,LINEAR(SMD)	AP1117	ATC SOT-223	
I105	RA	2365909696	IC,DIGITAL SMD	M6759	ALI PLCC44	
I105	RB	2365920396	IC,DIGITAL SMD	W78E62BP-40	WINBOND PLCC44	
I105	RC	2365923796	IC,DIGITAL SMD	SM2965C40J	SYNCMOS 44LPLCC	
I106	RA	2365307391	IC,LINEAR	TL431CLP	MOTOROLA	
I106	RB	2365321991	IC,LINEAR	KA431AZTA	FAIRCHILD	
I108		2365807296	IC,LINEAR(SMD)	AIC1341CS	AIC SO16	
I109	RA	2365307391	IC,LINEAR	TL431CLP	MOTOROLA	
I109	RB	2365321991	IC,LINEAR	KA431AZTA	FAIRCHILD	
I110	RA	2365307391	IC,LINEAR	TL431CLP	MOTOROLA	
I110	RB	2365321991	IC,LINEAR	KA431AZTA	FAIRCHILD	
I110	RC	2365328191	IC,LINEAR	AP431VA	ATC	
I112	RA	2365807196	IC,LINEAR(SMD)	AMC1117-3.3ST	ADD TO223	
I112	RB	2365808196	IC,LINEAR(SMD)	AP1117	ATC SOT-223	
I113		2365809996	IC,LINEAR(SMD)	P2781A-08SR	SOIC-8 PulseCore	
J101		2404338112	CONNECTOR	LEOCO 2011P 13PIN P=2.0		
J103		2404301107	CONNECTOR	JST PH 8P SIDE P=2.0 OR EQUAL		
J105	RA	2407630250	SOCKET,SMD	6240-50-OR5P 0.5*50P KYOCERA		
J105	RB	2407611250	SOCKET,SMD	6702-50 50PIN P=0.5 FFC ENTERY		
J106	RA	2407630250	SOCKET,SMD	6240-50-OR5P 0.5*50P KYOCERA		
J106	RB	2407630350	SOCKET,SMD	2206BL11250RLP 0.5*50P FRANCON		
J106	RC	2407611250	SOCKET,SMD	6702-50 50PIN P=0.5 FFC ENTERY		
J108		2404338104	CONNECTOR	LEOCO 2011P 5PIN P=2.0		
J109		2404301102	CONNECTOR	JST PH 3P SIDE P=2.0 OR EQUAL		
J110		2404301004	CONNECTOR	JST XH 5P SIDE P=2.5 OR EQUAL		
L100		2379820196	BEAD,HI-IMPEDANCE	2012MZ 200.00OHM	I<200MA	
L101		2379832096	BEAD,HI-IMPEDANCE	2012MZ 32.00OHM	I<300mA	
L102		2379832096	BEAD,HI-IMPEDANCE	2012MZ 32.00OHM	I<300mA	
L103		2379832096	BEAD,HI-IMPEDANCE	2012MZ 32.00OHM	I<300mA	
L104		2379820196	BEAD,HI-IMPEDANCE	2012MZ 200.00OHM	I<200MA	
L105		2379820196	BEAD,HI-IMPEDANCE	2012MZ 200.00OHM	I<200MA	
L106		2379820196	BEAD,HI-IMPEDANCE	2012MZ 200.00OHM	I<200MA	
L107		2379820196	BEAD,HI-IMPEDANCE	2012MZ 200.00OHM	I<200MA	
L108		2379820196	BEAD,HI-IMPEDANCE	2012MZ 200.00OHM	I<200MA	
L109		2379101495	FERRITE CORE	3.5X9X0.8		
L111		2371106400	COIL,CHOKE	LS-SH01C-016 33uH+-10% LI SHIN		
L113		2379101495	FERRITE CORE	3.5X9X0.8		

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
L115		2379101495	FERRITE CORE	3.5X9X0.8	(AL512 Only)
L120		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L121		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L122		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L123		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L124		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L125		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L126		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L127		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L128		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L129		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L130		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L131		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L132		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L133		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L134		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L135		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L136		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L137		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L138		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L139		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L140		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L141		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L142		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L143		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L144		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L145		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L146		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L147		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L148		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L149		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L150		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L151		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L152		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L153		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L154		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L155		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L156		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L157		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L158		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L159		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L160		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L161		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L162		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L163		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L164		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L165		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L166		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
L167		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
P100		2407310108	SOCKET,IC	2.54mmX7.62 08PIN DIP D/L	
P105		2407390144	SOCKET,IC	1.27mmX44PIN SMD PLCC	
P108		2407310108	SOCKET,IC	2.54mmX7.62 08PIN DIP D/L	
Q100	RA	2360100596	XISTOR,PNP R SMD	MMBT3906	FAIRCHILD SOT23
Q100	RB	2360100396	XISTOR,PNP R SMD	MMBT3906-7	VISHAY SOT-23
Q102	RA	2360100596	XISTOR,PNP R SMD	MMBT3906	FAIRCHILD SOT23
Q102	RB	2360100396	XISTOR,PNP R SMD	MMBT3906-7	VISHAY SOT-23
Q103	RA	2360300896	XISTOR,NPN R SMD	MMBT3904	FAIRCHILD SOT23
Q103	RB	2360301296	XISTOR,NPN R SMD	MMBT3904	DIODES SOT-23
Q103	RC	2360300596	XISTOR,NPN R SMD	MMBT3904-7	VISHAY SOT-23
Q104		2361111191	XISTOR,PNP R	2SA1020(Y)	TOSHIBA
Q105		2360301096	XISTOR,NPN R SMD	KST2907A	FAIRCHILD SOT23
Q106	RA	2360607996	FET,N-CH(SMD)	CEA3055L	CET SOT-89
Q106	RB	2360301496	XISTOR,NPN R SMD	2SK3065	ROHM MPT3
Q107	RA	2360607996	FET,N-CH(SMD)	CEA3055L	CET SOT-89
Q107	RB	2360301496	XISTOR,NPN R SMD	2SK3065	ROHM MPT3

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
Q108	RA	2360301396	XISTOR,NPN R SMD	PMBT2222A	PHILIPS SOT23
Q108	RB	2360301196	XISTOR,NPN R SMD	MMBT2222A	FAIRCHILD SOT23
Q109	RA	2360300896	XISTOR,NPN R SMD	MMBT3904	FAIRCHILD SOT23
Q109	RB	2360301296	XISTOR,NPN R SMD	MMBT3904	DIODES SOT-23
Q109	RC	2360300596	XISTOR,NPN R SMD	MMBT3904-7	VISHAY SOT-23
Q110	RA	2360300896	XISTOR,NPN R SMD	MMBT3904	FAIRCHILD SOT23
Q110	RB	2360301296	XISTOR,NPN R SMD	MMBT3904	DIODES SOT-23
Q111	RA	2360300896	XISTOR,NPN R SMD	MMBT3904	FAIRCHILD SOT23
Q111	RB	2360301296	XISTOR,NPN R SMD	MMBT3904	DIODES SOT-23
Q111	RC	2360300596	XISTOR,NPN R SMD	MMBT3904-7	VISHAY SOT-23
Q113	RA	2360100596	XISTOR,PNP R SMD	MMBT3906	FAIRCHILD SOT23
Q113	RB	2360100396	XISTOR,PNP R SMD	MMBT3906-7	VISHAY SOT-23
Q114		2361111191	XISTOR,PNP R	2SA1020(Y)	TOSHIBA
Q115	RA	2360300896	XISTOR,NPN R SMD	MMBT3904	FAIRCHILD SOT23
Q115	RB	2360301296	XISTOR,NPN R SMD	MMBT3904	DIODES SOT-23
Q115	RC	2360300596	XISTOR,NPN R SMD	MMBT3904-7	VISHAY SOT-23
R074		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R075		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R076		2253222296	RES,CHIP 1/10W	RC 1/10W 2.20K	J T1608 (AL512 Only)
R077		2253210196	RES,CHIP 1/10W	RC 1/10W 100.00	J T1608
R078		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
R079		2253233296	RES,CHIP 1/10W	RC 1/10W 3.30K	J T1608
R080		2253233296	RES,CHIP 1/10W	RC 1/10W 3.30K	J T1608
R081		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R082		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R083		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R084		2253200096	RES,CHIP 1/10W	RC 1/10W 0.00	J T1608
R090		2253200096	RES,CHIP 1/10W	RC 1/10W 0.00	J T1608
R091		2253212296	RES,CHIP 1/10W	RC 1/10W 1.20K	J T1608
R092		2253200096	RES,CHIP 1/10W	RC 1/10W 0.00	J T1608
R100		2251207506	RES,CHIP 1/10	RC 1/10W 75.00	F T1608
R101		2251207506	RES,CHIP 1/10	RC 1/10W 75.00	F T1608
R102		2251207506	RES,CHIP 1/10	RC 1/10W 75.00	F T1608
R103		2253210196	RES,CHIP 1/10W	RC 1/10W 100.00	J T1608
R104		2253210196	RES,CHIP 1/10W	RC 1/10W 100.00	J T1608
R105		2253222096	RES,CHIP 1/10W	RC 1/10W 22.00	J T1608
R107		2253210196	RES,CHIP 1/10W	RC 1/10W 100.00	J T1608
R109		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R110		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R111		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R113		2253222096	RES,CHIP 1/10W	RC 1/10W 22.00	J T1608
R114		2253210396	RES,CHIP 1/10W	RC 1/10W 10.00K	J T1608
R115		2253222096	RES,CHIP 1/10W	RC 1/10W 22.00	J T1608
R116		2253210396	RES,CHIP 1/10W	RC 1/10W 10.00K	J T1608
R117		2253210396	RES,CHIP 1/10W	RC 1/10W 10.00K	J T1608
R120		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R121		2253233296	RES,CHIP 1/10W	RC 1/10W 3.30K	J T1608
R122		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
R123		2253222096	RES,CHIP 1/10W	RC 1/10W 22.00	J T1608
R124		2253210396	RES,CHIP 1/10W	RC 1/10W 10.00K	J T1608
R125		2253210196	RES,CHIP 1/10W	RC 1/10W 100.00	J T1608
R127		2253210196	RES,CHIP 1/10W	RC 1/10W 100.00	J T1608
R128		2253210196	RES,CHIP 1/10W	RC 1/10W 100.00	J T1608
R133		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
R134		2253200096	RES,CHIP 1/10W	RC 1/10W 0.00	J T1608
R135		2253222096	RES,CHIP 1/10W	RC 1/10W 22.00	J T1608
R137		2253275096	RES,CHIP 1/10W	RC 1/10W 75.00	J T1608
R139		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
R141		2379380006	BEAD,HI-IMPEDANCE	1608 Z=80ohm(200MHz)	
R142		2253200096	RES,CHIP 1/10W	RC 1/10W 0.00	J T1608
R143		2253222096	RES,CHIP 1/10W	RC 1/10W 22.00	J T1608
R144		2253210596	RES,CHIP 1/10W	RC 1/10W 1.00M	J T1608
R145		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R146		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R147		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R153		2253210396	RES,CHIP 1/10W	RC 1/10W 10.00K	J T1608
R154		2253233196	RES,CHIP 1/10W	RC 1/10W 330.00	J T1608
R155		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R156		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R157		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R158		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R159		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R160		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R161		2253215196	RES,CHIP 1/10W	RC 1/10W 150.00	J T1608
R162		2253210396	RES,CHIP 1/10W	RC 1/10W 10.00K	J T1608
R163		2253233196	RES,CHIP 1/10W	RC 1/10W 330.00	J T1608
R165		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R166		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R168		2253210296	RES,CHIP 1/10W	RC 1/10W 1.00K	J T1608
R169		2253210296	RES,CHIP 1/10W	RC 1/10W 1.00K	J T1608
R171		2253233296	RES,CHIP 1/10W	RC 1/10W 3.30K	J T1608
R172		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R173		2253210296	RES,CHIP 1/10W	RC 1/10W 1.00K	J T1608
R183		2253200096	RES,CHIP 1/10W	RC 1/10W 0.00	J T1608
R187		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R188		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R189		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R190		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R191		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R194		2253210496	RES,CHIP 1/10W	RC 1/10W 100.00K	J T1608
R195		2253222296	RES,CHIP 1/10W	RC 1/10W 2.20K	J T1608
R196		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R197		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R198		2253247296	RES,CHIP 1/10W	RC 1/10W 4.70K	J T1608
R200		2253210396	RES,CHIP 1/10W	RC 1/10W 10.00K	J T1608
R201		2251243216	RES,CHIP 1/10	RC 1/10W 4.32K	F T1608
R202		2253210296	RES,CHIP 1/10W	RC 1/10W 1.00K	J T1608
R205		2251220026	RES,CHIP 1/10	RC 1/10W 20.00K	F T1608
R206		2253210396	RES,CHIP 1/10W	RC 1/10W 10.00K	J T1608
R207		2253236396	RES,CHIP 1/10W	RC 1/10W 36.00K	J T1608
R209		2253256296	RES,CHIP 1/10W	RC 1/10W 5.60K	J T1608
R210		2253211196	RES,CHIP 1/10	RC 1/10W 110.00	J T1608
R211		2253212396	RES,CHIP 1/10	RC 1/10W 12.00K	J T1608
R212		2251233016	RES,CHIP 1/10	RC 1/10W 3.30K	F T1608
R213		2253233296	RES,CHIP 1/10W	RC 1/10W 3.30K	J T1608
R214		2226510200	RES,SEMI FIX	0.3W B 1K K	
R215		2251214716	RES,CHIP 1/10	RC 1/10W 1.47K	F T1608
R216		2251211516	RES,CHIP 1/10	RC 1/10W 1.15K	F T1608
R217		2253233296	RES,CHIP 1/10W	RC 1/10W 3.30K	J T1608
R218		2251221026	RES,CHIP 1/10	RC 1/10W 21.00K	F T1608
R219		2251233016	RES,CHIP 1/10	RC 1/10W 3.30K	F T1608
R221		2253210396	RES,CHIP 1/10W	RC 1/10W 10.00K	J T1608
R222		2253436196	RES,CHIP 1/4	RC 1/4W 360.00	J T3216
R223		2253436196	RES,CHIP 1/4	RC 1/4W 360.00	J T3216
R224		2253200096	RES,CHIP 1/10W	RC 1/10W 0.00	J T1608
R225		2253210496	RES,CHIP 1/10W	RC 1/10W 100.00K	J T1608
R226		2253415096	RES,CHIP 1/4	RC 1/4W 15.00	J T3216
R227		2253200096	RES,CHIP 1/10W	RC 1/10W 0.00	J T1608
U001		2202510401	PCB MULTILAYER	166L14 MAIN FR4 110*136.5 2.01	
X100		2369103601	XTAL,OSC	XTAL 12MHZ CL30P H/S	
X101		2369103601	XTAL,OSC	XTAL 12MHZ CL30P H/S	

CON P.C.BOARD

D701	2363703800	LED	EL-209YGW	EVERLIGHT
P701	2404301107	CONNECTOR	JST PH 8P SIDE P=2.0	OR EQUAL
S701	2403702200	SWITCH,PU-TC	TSAA-2	HUAJIE
S702	2403702200	SWITCH,PU-TC	TSAA-2	HUAJIE
S703	2403702200	SWITCH,PU-TC	TSAA-2	HUAJIE
S704	2403702200	SWITCH,PU-TC	TSAA-2	HUAJIE

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION		REMARK
S705		2403702200	SWITCH,PU-TC	TSAA-2	HUAJIE	
U701		2202120100	PC BOARD	VE150-2 KEYPAD 94V0 135*15		

POWER P.C.BOARD

C801		2300922401	CAP,MTL MINI	0.220UF	275V	M
C802		2287247212	CAP,CER	CK45F	4700.000PF	250VAC M
C803		2287247212	CAP,CER	CK45F	4700.000PF	250VAC M
C806		2307422312	CAP,MTL	0.022uF/400V	J P=10.0	
C807		2285168091	CAP,CER	CK45B	68.000PF	1KV K
C808		2333647601	CAP,ELE 105°C	47uF/50V	§ 8*11 P=3.5	
C809		2281110491	CAP,CER	CK45B	0.100UF	50V K
C810		2302133391	CAP,MTL	CF93M	0.033UF	100V J
C812	RA	2330004001	CAP,MINI ELE	100u/400V	PS § 18*32	ELITE
C812	RB	2330004200	CAP,MINI ELE	CE 100uF/400V	105°C 18*30	HJC
C812	RC	2330005401	CAP,MINI ELE	100u/400V	ZT105°C 18*36	HEC
C813		2330003501	CAP,MINI ELE	1500uF/10V	105C	
C814		2330003501	CAP,MINI ELE	1500uF/10V	105C	
C815		2330003501	CAP,MINI ELE	1500uF/10V	105C	
C817		2335210812	CAP,ELE LOE ESR	1000uF/10V	§ 10*17 P=5.0	K
C819		2281110291	CAP,CER	CK45B	1000.000PF	50V K
C820		2301310491	CAP,MTL	CF93M	0.100UF	63V J
C822		2283122291	CAP,CER	CK45B	2200.000PF	500V K
C823		2287247212	CAP,CER	CK45F	4700.000PF	250VAC M
C824		2300922401	CAP,MTL MINI	0.220UF	275V	M
D801	RA	2368502200	RECT,BRIDGE	GSIB460 4A/600V	GS	
D801	RB	2368502100	RECT,BRIDGE	KBJ4J 4A/600V	CHENMKO	
D802	RA	2363223195	DIODE,RECT	UF4007	GS	
D802	RB	2363231995	DIODE,RECT	UF4007	PEC	
D803	RA	2363223095	DIODE,RECT	UF4005	GS	
D803	RB	2363221495	DIODE,RECT	UF4005G	PEC.	
D804	RA	2363225500	DIODE,RECT	FCH20A10 20A/100V	TO-220AB	
D804	RB	2368400100	RECT,SCHOTTKY	SB20100F	PEC	
D805		2363300212	DIODE,SCHOTTKY	31DQ06	NI	
D806	RA	2363506395	DIODE,ZENER	HZ15-2 14.5-15.1V	0.5W HITACHI	
D806	RB	2363506495	DIODE,ZENER	MTZJ15C 14.35-15.09V	ROHM	
D807	RA	2363504595	DIODE,ZENER	HZ7A3 6.6V-6.9V		
D807	RB	2363516095	DIODE,ZENER	MTZJ6.2C 6.12-6.44V	ROHM	
F801		2213125207	FUSE	LITTEL 21502.5 2.5A	250V SB	
F802		2407200791	HOLDER,FUSE	FC-05C		
I801		2365327413	IC,LINEAR	KA5M0365R-YDTU	FAIRCHILD FORMI	
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	2365321991	IC,LINEAR	KA431AZTA	FAIRCHILD	
L802		2379101495	FERRITE CORE	3.5X9X0.8		
L804		2371131000	COIL,CHOKE	JD156G 15UH	21.5T REF	
L805		2371157700	COIL,CHOKE	JT166S UU-10.5		
P801		2404339301	CONNECTOR	LEOCO 3951-01(V)	2PIN P=3.96	
P802		2427412613	WIRE HARNESS	JST XHP-5P*2	1007#22*5 90L	
R801		2232610595	RES,CBN 1/2	RD 1/2W	1.00M J	
R804		2235643403	RES,MTL 3	RS 3W	430.00K J	
R805		2235847300	RES,MTL 5	RS 5W	47.00K J	
R806		2239234815	RES,PRES 1/4 S	RN 1/4WS	3.48K F	
R809		2247315095	RES,FUSE 1/2	RF 1/2W	15.00 J	
R810		2239220025	RES,PRES 1/4 S	RN 1/4WS	20.00K F	
R811		2239247015	RES,PRES 1/4 S	RN 1/4WS	4.70K F	
R812		2239224315	RES,PRES 1/4 S	RN 1/4WS	2.43K F	
R813		2233410195	RES,CBN 1/4 S	RD 1/4WS	100.00 J	
R814		2239222015	RES,PRES 1/4 S	RN 1/4WS	2.20K F	
R815		2247412195	RES,FUSE 1	RF 1W	120.00 J	
R816		2232610095	RES,CBN 1/2	RD 1/2W	10.00 J	
R817		2233410295	RES,CBN 1/4 S	RD 1/4WS	1.00K J	
R840	RA	2229201212	THERMISTOR,PTH	SCK-103 10+-20% 3A	THINKING	
R840	RB	2229400612	THERMISTOR,NTC	NTC UPPERMOST N10SP010***-K2		

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R841		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00 J	
T801		2374208200	XFORMER,POWR	ERL-28 L=1.2mH HJC	
U801		2202121101	PC BOARD	MD96851 PWR 94V0 170*58.5 2.00	

AUDIO P.C.BOARD (AL512 Only)

C601		2333610591	CAP,ELE 105°C	1uF/50V \$ 5*11 P=5.0	
C602		2333310812	CAP,ELE 105°C	1000uF/16V \$ 10*20 P=3.5	
C605		2281410491	CAP,CER	CK45F 0.100UF 50V Z	
C606		2333610691	CAP,ELE 105°C	10uF/50V \$ 5*11 P=5.0	
C608		2291547291	CAP,MYL	CQ92M 4700.000PF 100V K	
C610		2333610691	CAP,ELE 105°C	10uF/50V \$ 5*11 P=5.0	
C611		2333610591	CAP,ELE 105°C	1uF/50V \$ 5*11 P=5.0	
C612		2291547291	CAP,MYL	CQ92M 4700.000PF 100V K	
I601		2365316300	IC,LINEAR	TDA7057AQ PHILIPS	
L601		2379101495	FERRITE CORE	3.5X9X0.8	
L603		2379101495	FERRITE CORE	3.5X9X0.8	
L604		2379101495	FERRITE CORE	3.5X9X0.8	
L605		2379101495	FERRITE CORE	3.5X9X0.8	
L606		2379101495	FERRITE CORE	3.5X9X0.8	
L607		2379101495	FERRITE CORE	3.5X9X0.8	
L609		2379101495	FERRITE CORE	3.5X9X0.8	
P603		2404371002	CONNECTOR	JST PH 3P TOP P=2.0 OR EQUAL	
P604		2404300002	CONNECTOR	JST XH 3P TOP P=2.5 OR EQUAL	
P607		2404371003	CONNECTOR	JST PH 4P TOP P=2.0 OR EQUAL	
R601		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R602		2235615013	RES,MTL 3	RS 3W 15.00 J	
R603		2233418495	RES,CBN 1/4 S	RD 1/4WS 180.00K J	
R604		2233439195	RES,CBN 1/4 S	RD 1/4WS 390.00 J	
R605		2235615013	RES,MTL 3	RS 3W 15.00 J	
R606		2233430295	RES,CBN 1/4 S	RD 1/4WS 3.00K J	
R607		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R608		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K J	
R609		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R610		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R611		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K J	
U601		2202121600	PC BOARD	166LP13 AUDIO CAM1 56*89	

AUDIO IN P.C.BOARD (AL512 Only)

L608		2379101495	FERRITE CORE	3.5X9X0.8	
P601		2405104900	JACK,1P	2SJ05402N23(BK)PHONE SINGATRON	
P602		2427412632	WIRE HARNESS	2010S 3P*2 1061#24 140L	
U602		2202119500	PC BOARD	L332 AUDIO IN 94V0 23*30	

OTHERS

P951		2427130079	POWER CORD	CHINA WALL 1.5M RAL7035	(CHINA)
P951		2427130055	POWER CORD	E WALL 1.83M(71922)	(EUROPE)
P951		2427130035	POWER CORD	SVT 18/3 1.8M USA WALL KDS	(USA)
P951		2427130102	POWER CORD	UK WALL 1.83M GE96750	(UK)
P951		2427130063	POWER CORD	AUSTRALIA WALL 1.83M GE96750	(AUSTRALIA)
P961		2427501143	I/O CABLE	D15/C13 20276(3+6)1.5M GE96750	(1.5M)
P961		2427501150	I/O CABLE	D15/C13 20276(3+6)1.83M 96750	(1.83M)
P962		2427700009	CORD RCA	3.5φPLUG 2547#28*2C 1500L	(AL512 only 1.5m)
P962		2427700015	CORD RCA	STEREO 2547#28 1.83M GE96750	(AL512 only 1.8m)
P980		2420309001	FFC CABLE	90L*25.5W*0.05T 0.3W*0.5P*50N	
P981		2420309001	FFC CABLE	90L*25.5W*0.05T 0.3W*0.5P*50N	
P982		2427412654	WIRE HARNESS	PHR-8P*2 1061#26 180L	
P983		2427412582	WIRE HARNESS	JST PHR-5P*2 2464#24*6C 260L	
P984		2427412654	WIRE HARNESS	PHR-8P*2 1061#26 180L	
P985		2407000100	SOCKET,ASSY	JT166Q14 POWER 0707-1CQ LEOCO	
P986		2427412674	WIRE HARNESS	PHR-3P/XHP-3P 1007#24 110L	
U901	RA	2414500800	INVERTER	PLCD1015202 EMAX	

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION		REMARK
U901	RB	2414500900	INVERTER	CDA-2103H01	CHI SAM	
U901	RC	2414500700	INVERTER	L0070	SAMPO	
V901		2212002300	LCD PANEL	CLAA150XG 02J	CPT	
W901		2391204904	SP,DYN OVAL	8 ohm 1.5W P011F(HB18)	HIBOX	(AL512 Only)