

Service Manual

Model: SR400A

ALTO
REV.2

CONTENTS

1. Specifications

2. Block Diagram

3. Schematic Diagram

4. Printed Circuit Board

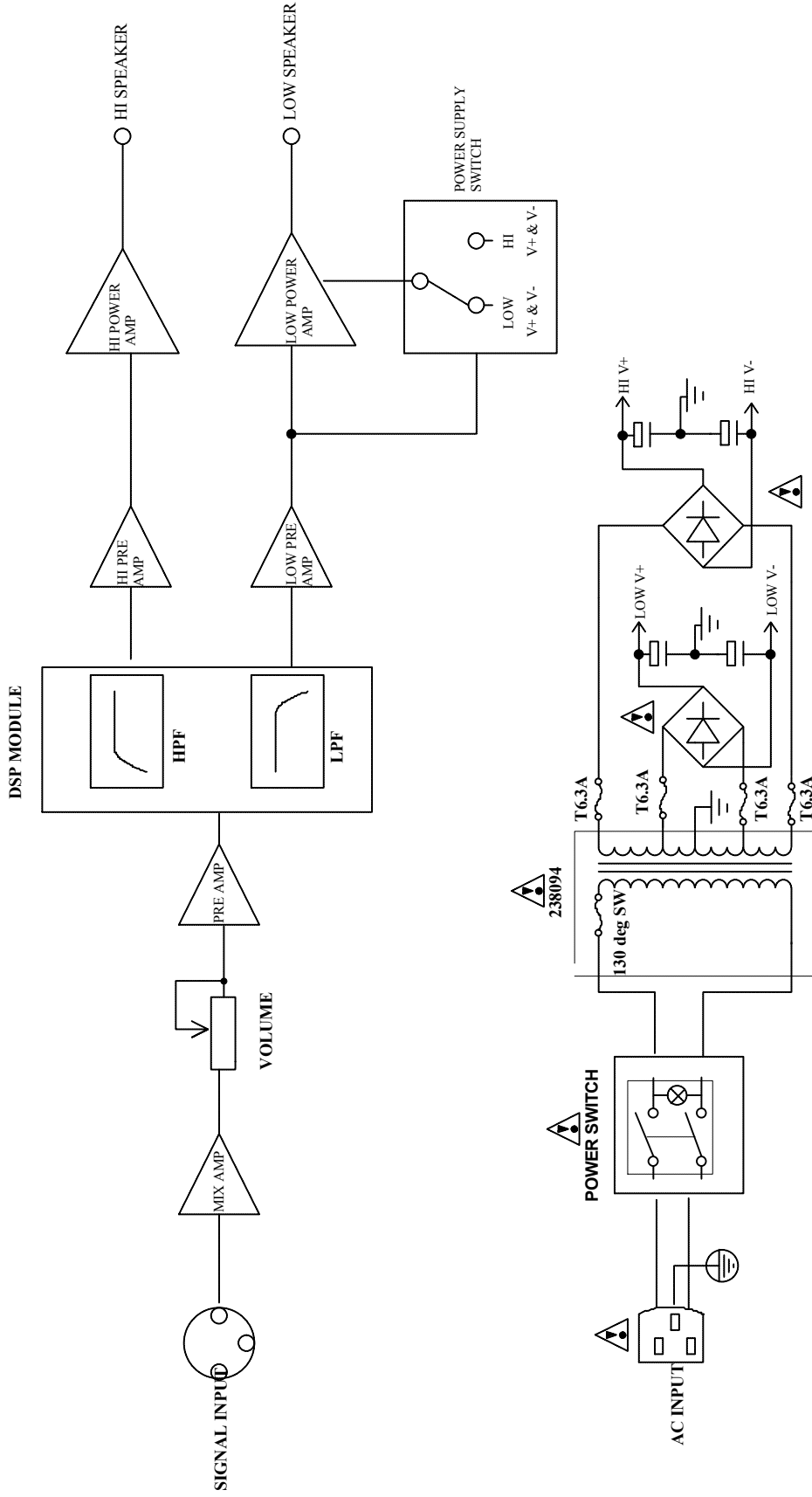
5. Test Procedures

6. Structural Drawing

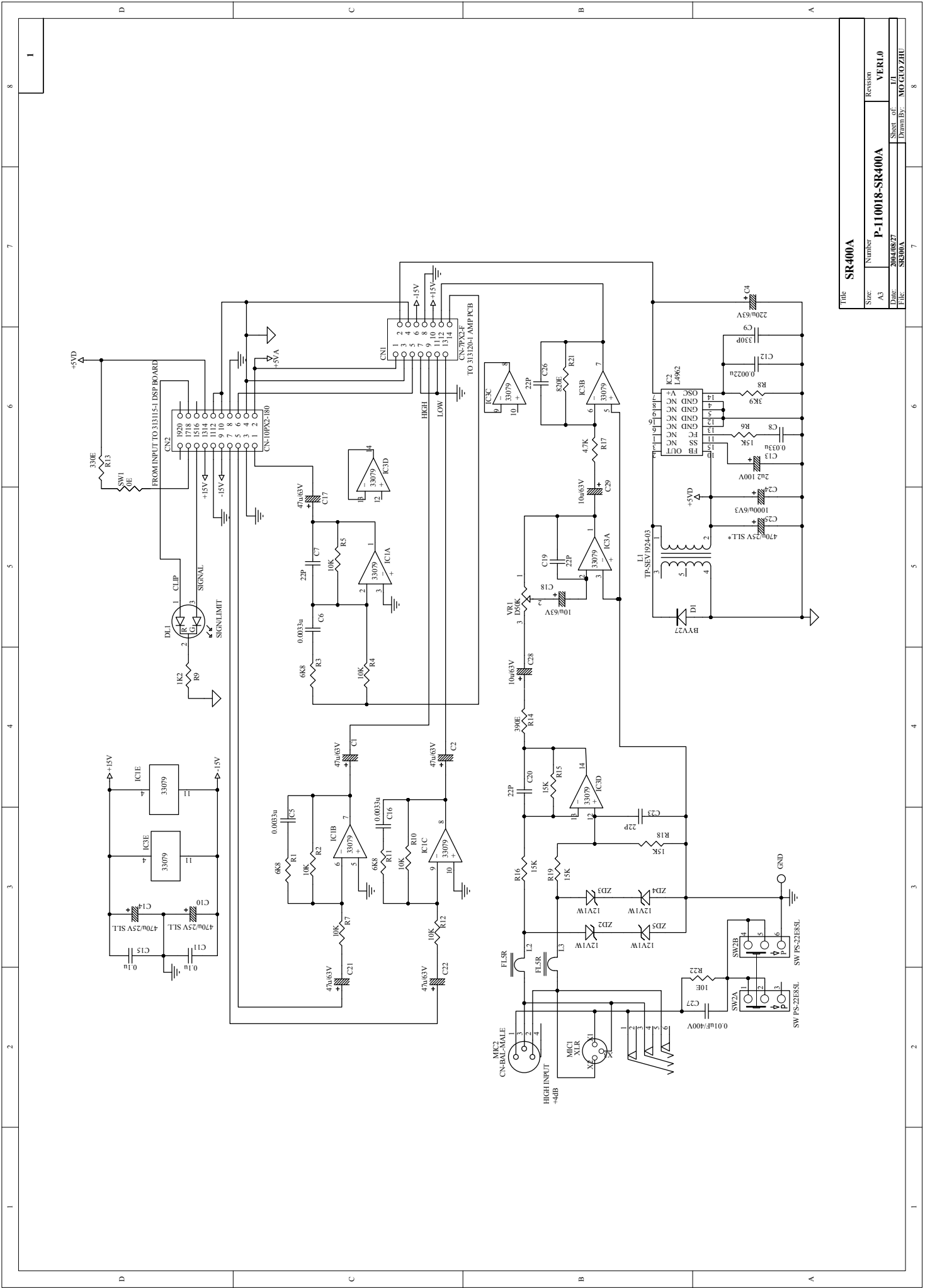
7. Exploded View & Mechanical Parts List

8. Electrical Parts List

SR400A BLOCK DIAGRAM



Title		SR400A	
Size:	Number	Revision	
A3	SR400A BLOCK DIAGRAM	VER1.0	
Date:	Sheet of:	Drawn By:	
	1/1	MO GUO ZHU	



Title		SR400A	
Size:	Number	Revision	VER1.0
A3	P-110018-SR400A		
Date:	2004/08/27	Sheet of:	11
File:	SR400A	Parent By:	MOGLIO ZHU

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C

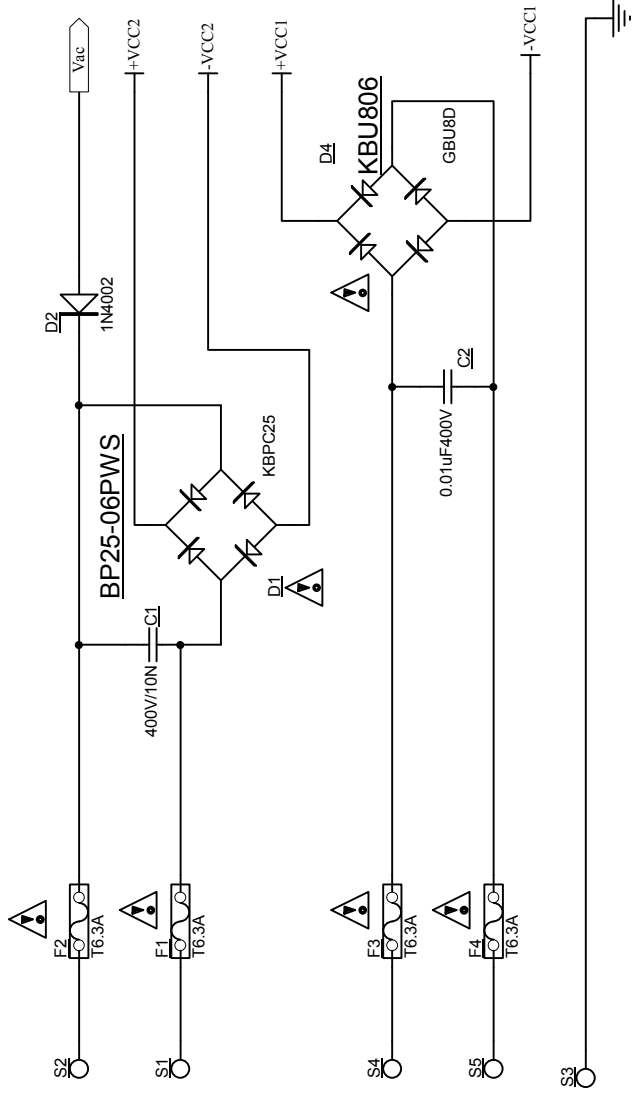
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A

A



Title **SR400A**

Number **P-313121-1**

Revision **VER1.0**

Date: **2004/08/27**

Sheet of: **1/1**

File: **SR400A**

Drawn By: **MO GUO ZHU**

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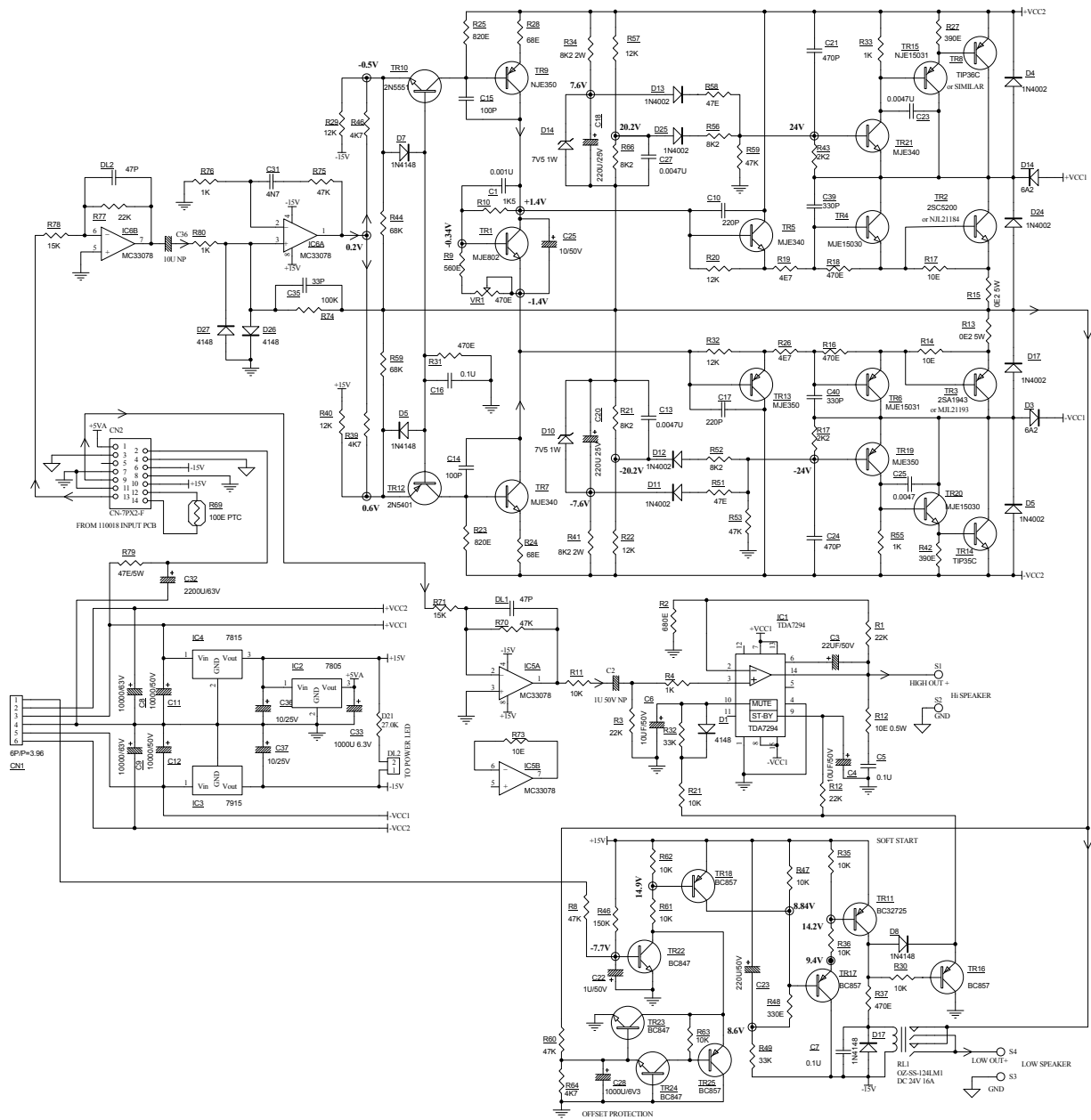
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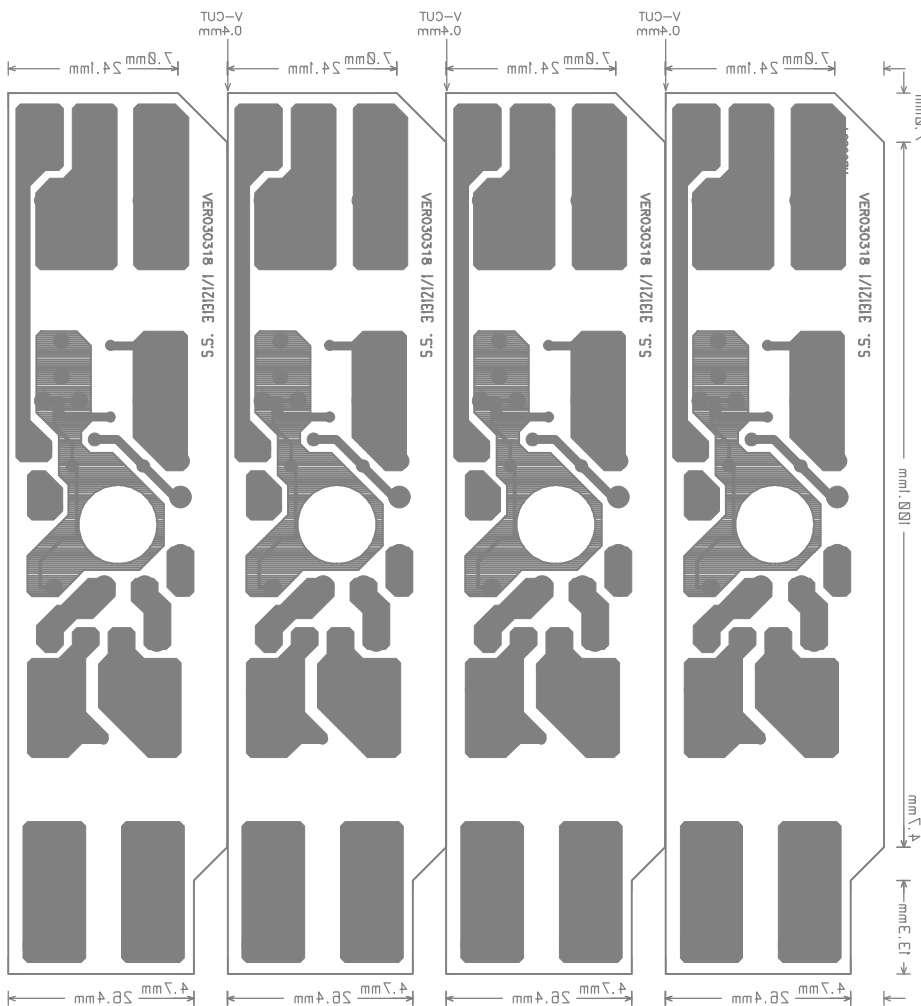
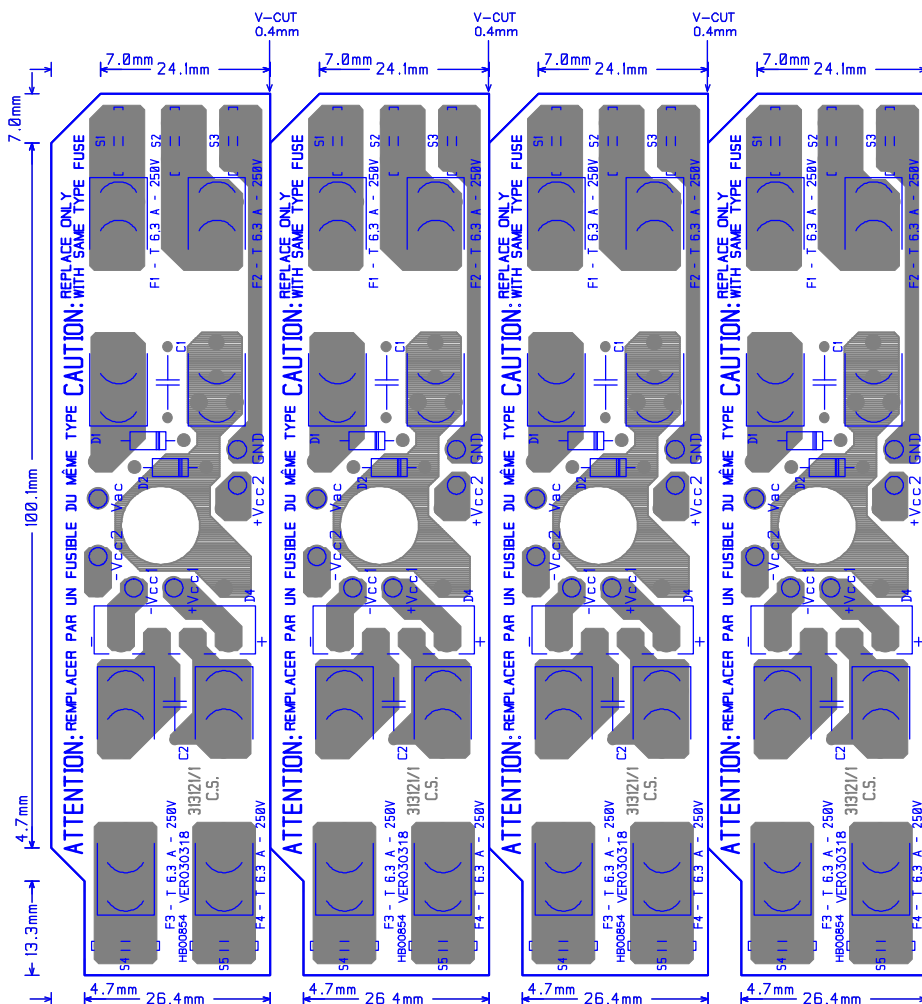
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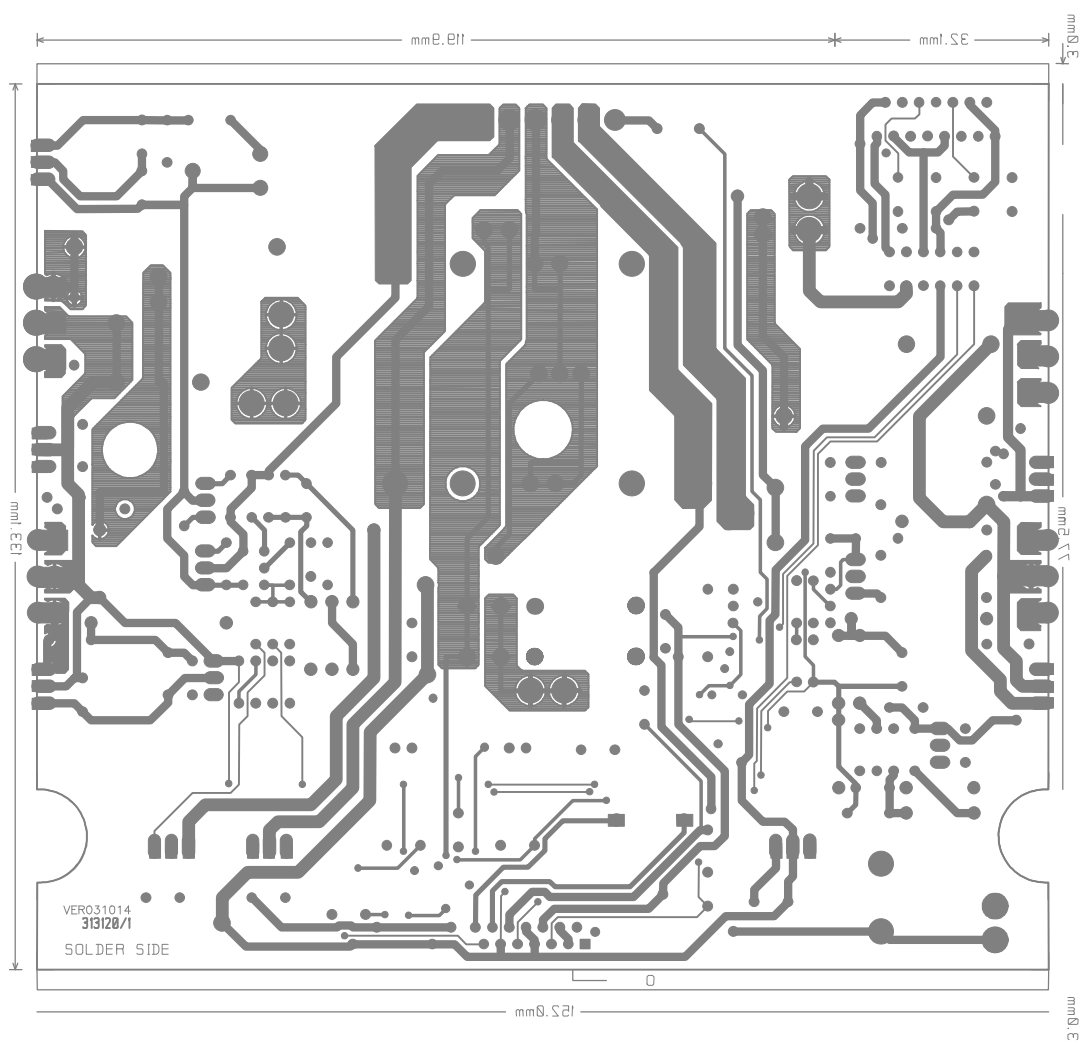
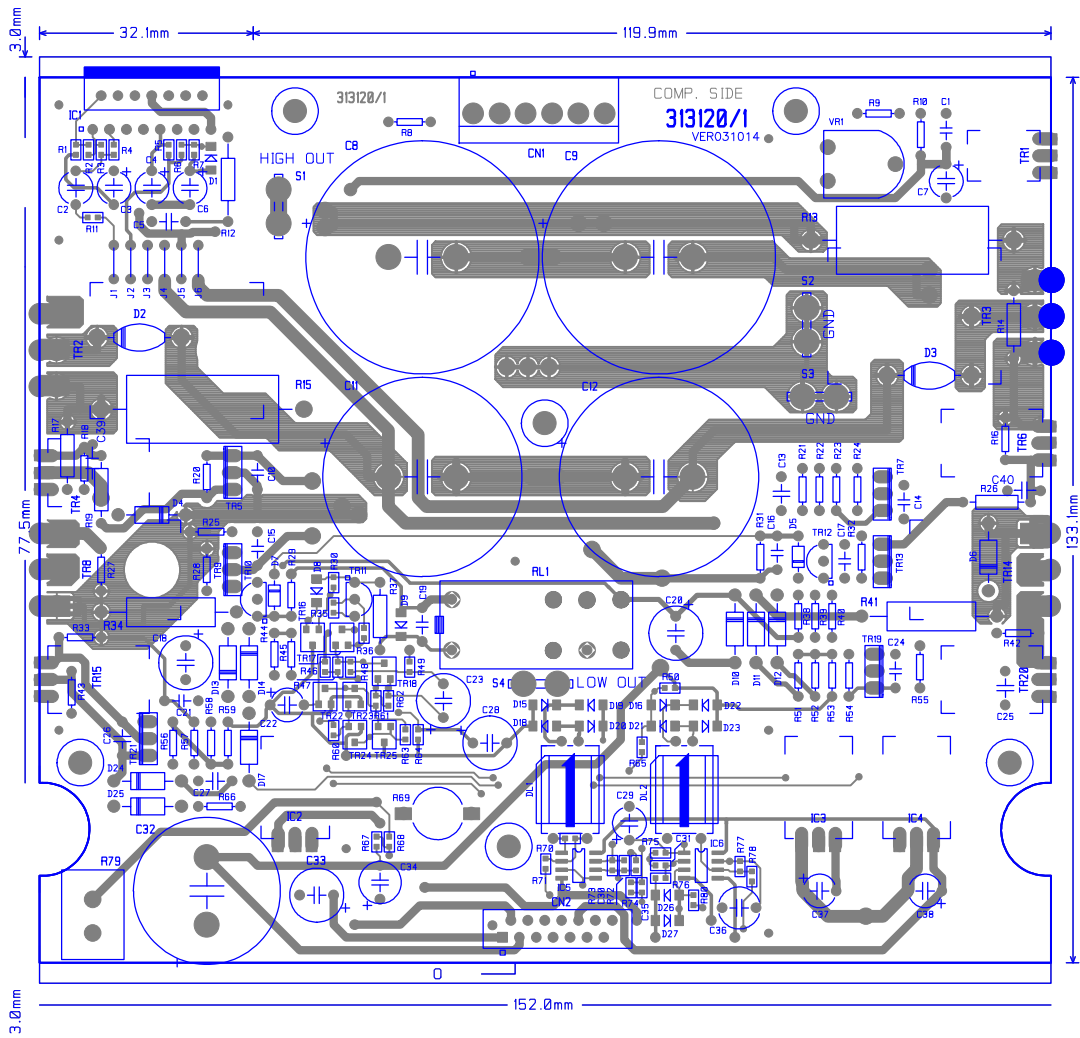
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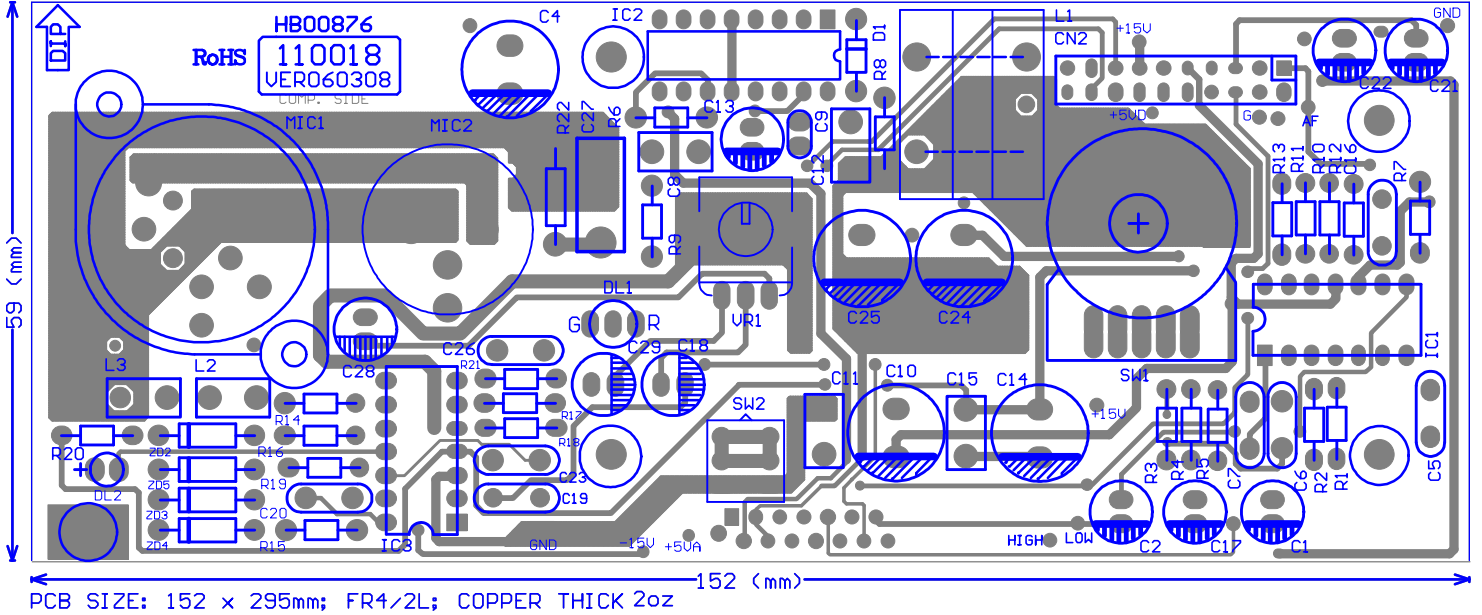


Title			SR400A		
Size	Number	Revision			
A2	P-313120-1-SR400A	VER1.0			
Date:	2014.08.27	Sheet of	11		
File:	SR300A	Drawn By:	MOGLIOZHU		

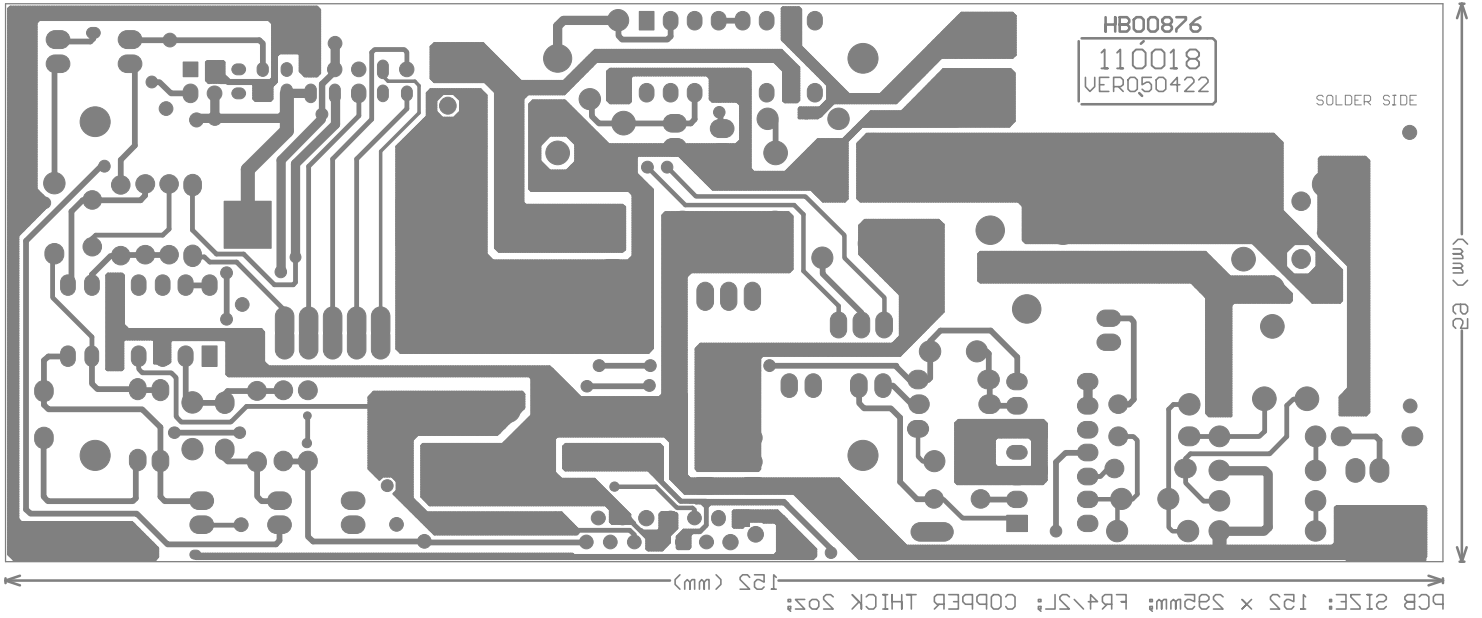




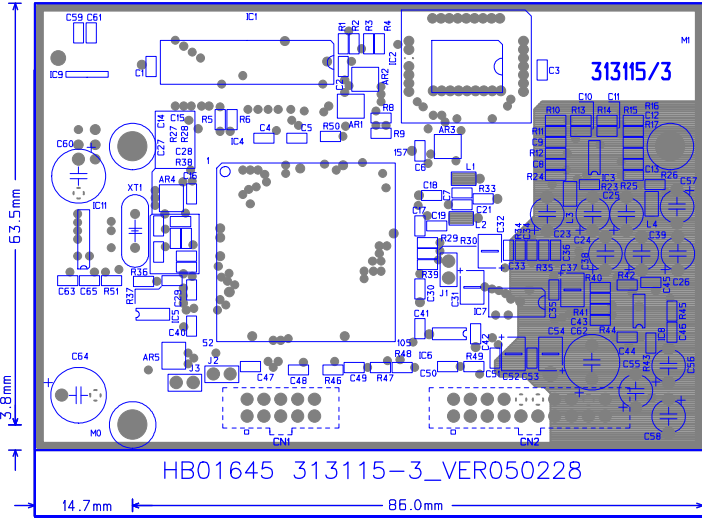
TOPLAYER&TOPOVERLAY



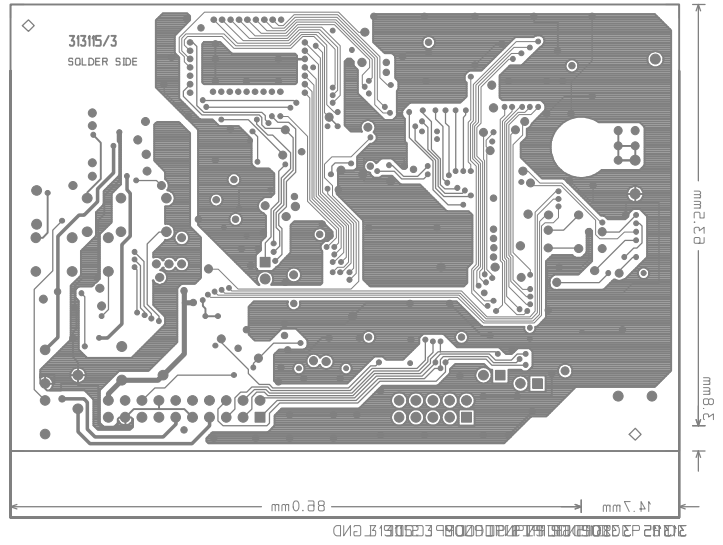
BOTTOM LAYER



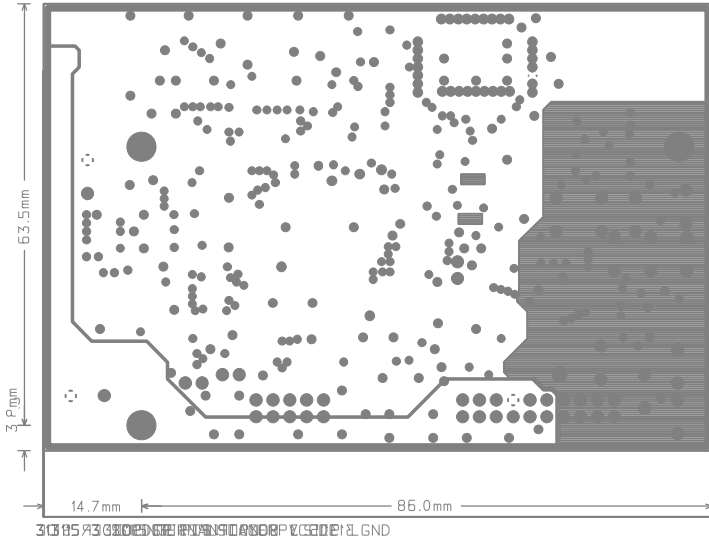
TOPLAYER&TOPOVERLAY



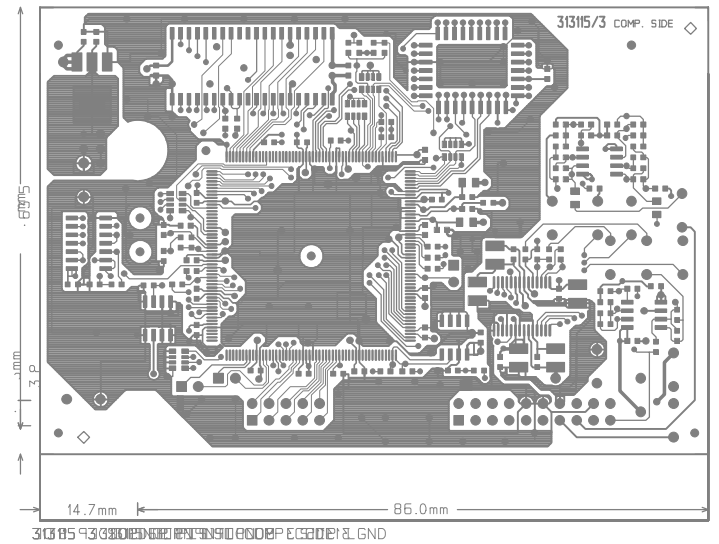
BOTTOMLAYER



VC



CS



Instruments required:

- 1) Sinusoidal signal generator,
- 2) Dual trace scope, with probe,
- 3) Digital multimeter,
- 4) Variac 0-250 Vac,
- 5) Resistive load 4Ω 800W,
- 6) Resistive load 8Ω 300W
- 7) Pink noise from the GM "AUDIO CD".

P.S: Isolate the oscilloscope from earth and adjust the two traces on center of screen in GND position.

Par. 1: visual check

- Make a visual check if the amplifier is perfectly done and especially verify:
 - a) the right value of fuses 6.3A 250V *4PCS
 - b) the right earth main connection on rear surface of front panel.
 - c) the insulation between the heat-sink and the case of TR1-15, IC1, 2, 3, 4 -then,
- Set the VOLUME control full clockwise.

Par. 2: connections

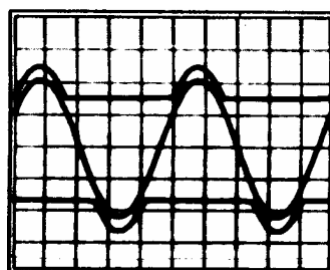
- Switch off the amplifier module,
- Set the ENCODER pot. on preset "NORMAL".
- Connect the mains of amplifier module to VARIAC and set it at zero AC voltage.
- Connect the signal generator to Line Input (XLR socket) and set it at 500Hz, 0dB .
- Connect the scope CH1 probe to amplifier low output and CH2 probe to amplifier high output-

Par. 3: Initial test

- Increase slowly the VARIAC voltage up to the nominal value (230Vac).
- Check the transformer sec. voltages with multimeter, (without signal on input):
 - S1-S2: $90V \pm 1.5Vac$
 - S4-S5: $47V \pm 1.5Vac$
- Check the +/-15Vdc supply on relative voltage regulator outputs (IC3 & IC4 devices).
- Switch ON the signal generator and verify that the output signals must be symmetrical referring to GND, without detectable distortion and oscillation.
- Check that the low amplifier power output signal is $28 \pm 2V_{PEAK}$ ($19.5V_{RMS}$).
- -Check of SIGNAL led function, moving the volume potentiometer of amplifier;
 - when the output signal is $< 0.5V_{peak}$ the led must be OFF,
 - when the output signal is $> 0.5V_{peak}$, the led must be GREEN lighted.
- Then, rotate the volume potentiometer knob full clockwise

Par. 4: BOOSTER check of LOW Amplifier

- Connect alternatively the CH2 probe tip of scope on D2 cathode and D3 anode and verify the following conditions:
 - when the output signal is $< 18V_{rms}$ the $\pm VCC1$ voltage must remain linear at 28V,
 - when the output signal is $> 18V_{rms}$ the $\pm VCC1$ voltage must follow the output signal wave with 4Vdc offset, as shown in the following picture



TESTING PROCEDURE

- Switch ON the LOW amplifier output to 4Ω load resistor and repeat the above booster check verifying more or less the same $\pm V_{CC1}$ conditions and verify that the signal must be symmetrical refer to GND, without detectable distortion and oscillation.

Increase the VOLUME pot. until a signal clipping.

Switch OFF the LOW amplifier out. to 4Ω load resistor

Par. 5: COMPRESSOR check of LOW amplifier

-Increase the input signal of 10 dB and check the out. signal to remain constant at $45V_{peak}$ and if the Signal/Comp. led has changed the lighted colour, from GREEN to RED.

Par. 6: PTC function check on Heatsink

- Heat the PTC temperature sensor with a welder heated tip, in touch with its body, to verify this protection works properly reducing the amplifier out. signal to few volts on time.

P.S. The check must be done with PTC, placed into heat-sink hole and silicon grease on.

Par. 7: Idle current setting of LOW amplifier

- Decrease to zero the signal generator, then, adjust VR1 trimmer to have a $5mV \pm 0,5mV_{dc}$ voltage drop across R13 & R15 ($0,22\Omega$) power resistors.

Par. 8: HIGH amplifier check .

- Select a 10KHz frequency with 0dB amplitude on signal generator.

- Connect CH2 probe tip of scope on HIGH amplifier output.

- Check that the high amplifier power output signal is $26 \pm 2V_{PEAK}$ ($18V_{RMS}$).

- Switch ON the HIGH amplifier output to 8Ω load resistor and increase the VOLUME pot. -

Verify the out. signal is limited to $22V_{peak}$.

- Switch OFF the HIGH amplifier output to 8Ω load resistor.

Part .9: Burn-in test

1. Connect the pink noise signal from CD player with the line input of speaker module.

2. Connect 4ohm 500W load resistor with the bass output.

3. Connect 8ohm 300W load resistor with the treble output.

4. Put band switch to the position 1, and then turn on the power switch of speaker module.

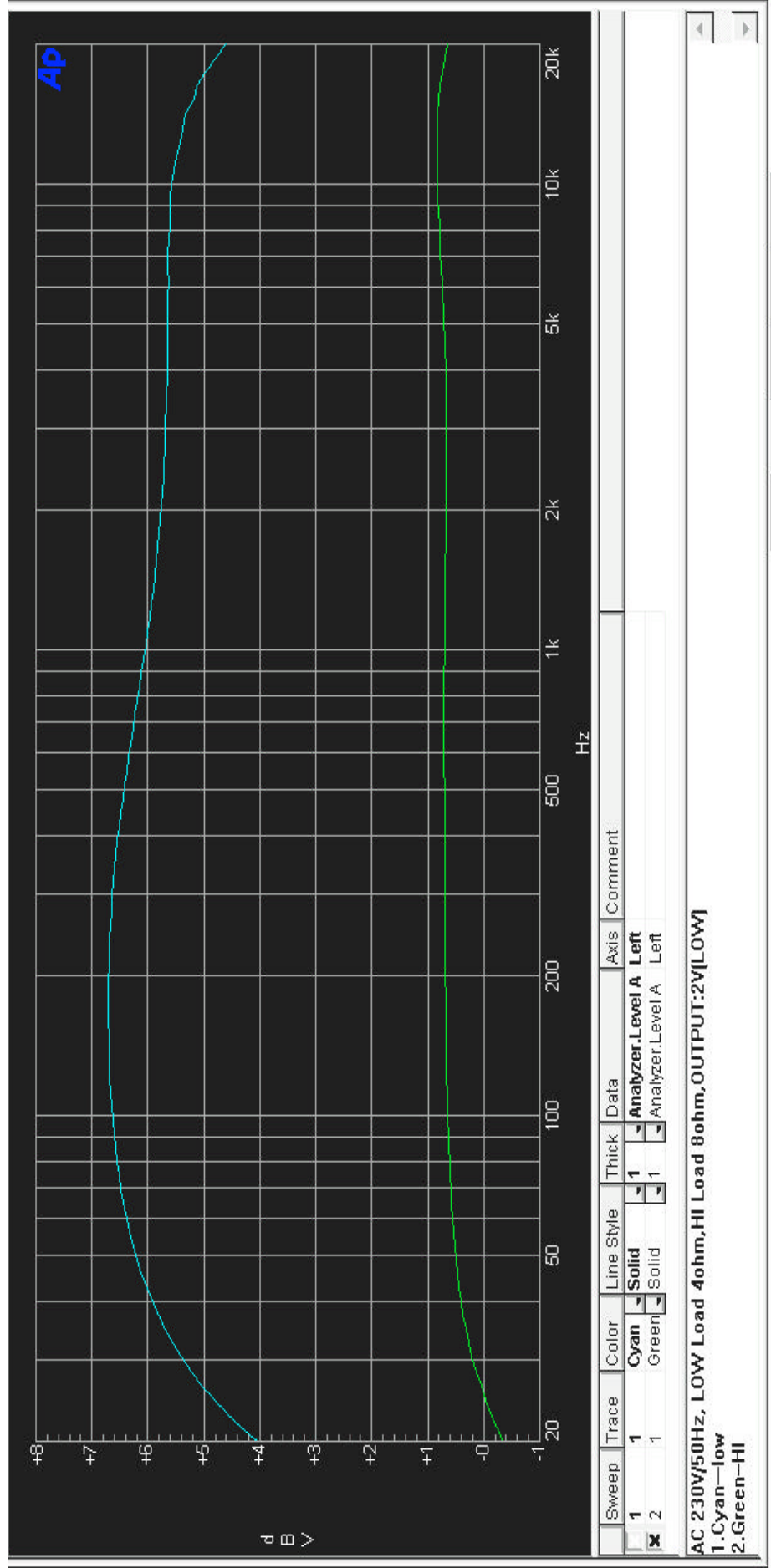
5. Adjust the pink noise level from CD player until SIGNAL/LIMIT indicators (red, green) sparkle.

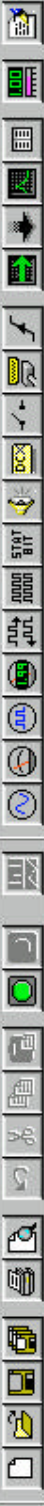
6. Put the speaker module vertical and take the burn-in test for 2 hours.

Part .10: Final inspection

1. Check the electronic performance of the tested unit completely.

DSP OFF Frequency Response Curve of SR400A Speaker Module





Audio Precision 09/03/04 16:54:22

Sweep

Data 1: Analyzer Level A
 Top: +24.082 dBV Autoscale
 Bottom: -60.000 dBV Log Lin
 Divs: Auto Limits...

Data 2: None...
 Top: Autoscale
 Bottom: Log Lin
 Divs: Auto Limits...

Source 1: Analog Generator Frequency
 Start: 20.0000 kHz Log Lin
 Stop: 20.0000 Hz Divs: Auto
 Steps: 100
 Multiply: 933254 Table Sweep...
 Repeat Stereo Sweep
 Append Single Point



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Solid	1	Analyzer.Level A	Left	
2	1	Green	Solid	1	Analyzer.Level A	Left	

AC 230V/50Hz,LOW load 4ohm,HI load 8ohm,OUTPUT:2V[LOW]

- 1.PRESET1—Cyan[LOW]
- 2.PRESET1—green[HI]

