

Checklist after service of class TD Mark II

C 16:4, C 28:4, C 48:4, C 68:4, C 88:4,

FP 4000, FP 6000Q, FP 7000, FP 9000, FP 10000Q, FP 13000 & FP 14000

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Index

1	INTRODUCTION.....	3
2	CHECK LIST CLASS TD MARK II.....	3

1 Introduction

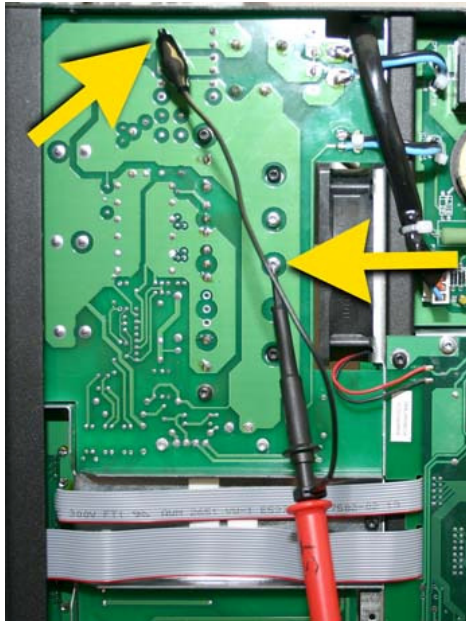
This checklist shall be used to make sure the amplifier is always checked in a proper way after service has been done. It is important to follow the steps in this check list and check all points so that the set up of parameters in the amplifier is correct adjusted. When have done all checks and adjusted the parameters the amplifier will work properly and will have the output power that it is designed for.

2 Check list class TD Mark II

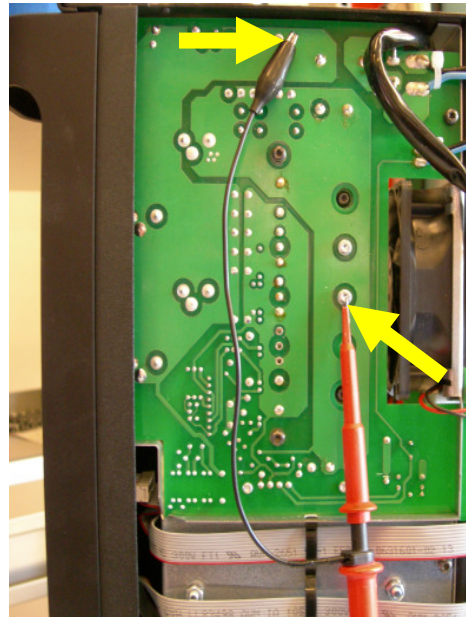
Always clean the amplifier by blowing with compressed air through coolers and fans. Be careful when blowing where big electrolytic capacitors are placed so that the capacitor doesn't get damaged.

1) After repair always start the amplifier with current potentiometer (VR1) located on PWMF1-board. On is clockwise (cw) and off is counter clockwise (ccw). Check that the switch pulse is normal. 300V line should increase some volts when relay clicks.

1.	Connect an oscilloscope probe.		
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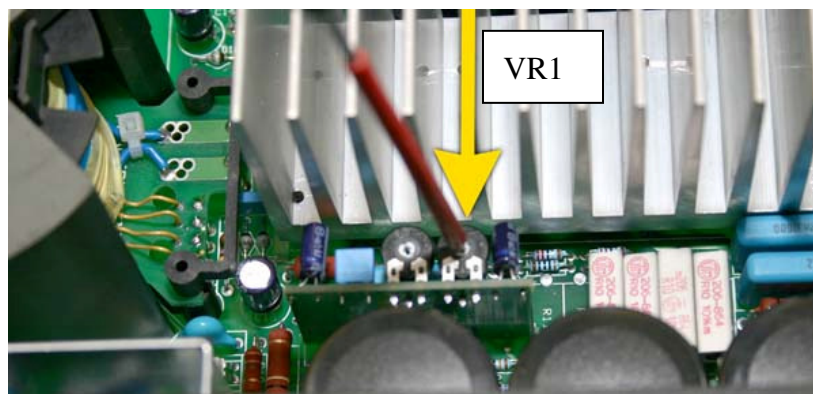
Measuring points (old layout).



Measuring points (new layout).

2.	VR1 fully ccw.		
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VR1-PWMF1



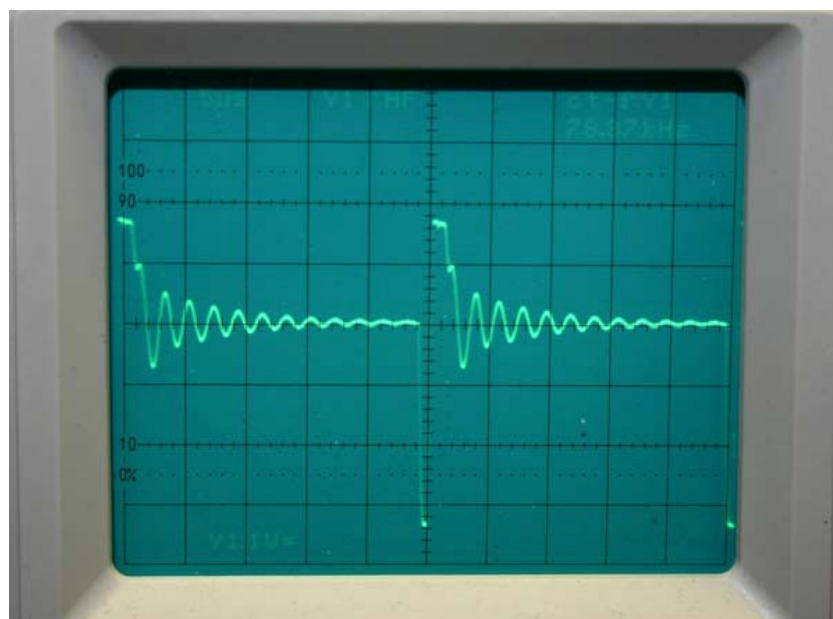
3.	Insert mains plug into variac.		
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4.	Mains switch ON and remote switch MANUAL		
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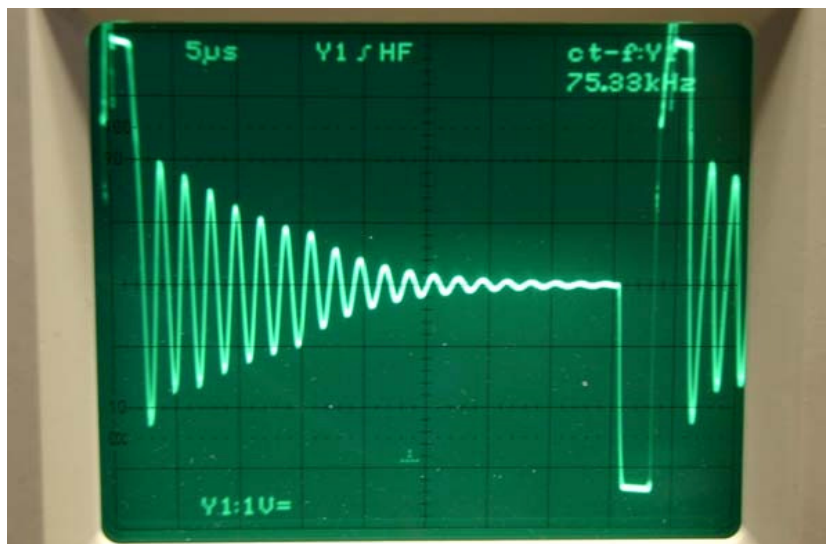


5.	Slowly turn variac up, at the same time look at power-supply oscilloscope.	230VAC	
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6.	Begin turning VR1 cw. Waveform should look like below picture.		
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7.	At a certain point, power supply will regulate. Then, turn current potentiometer fully cw.	120-140V	+/- RAIL
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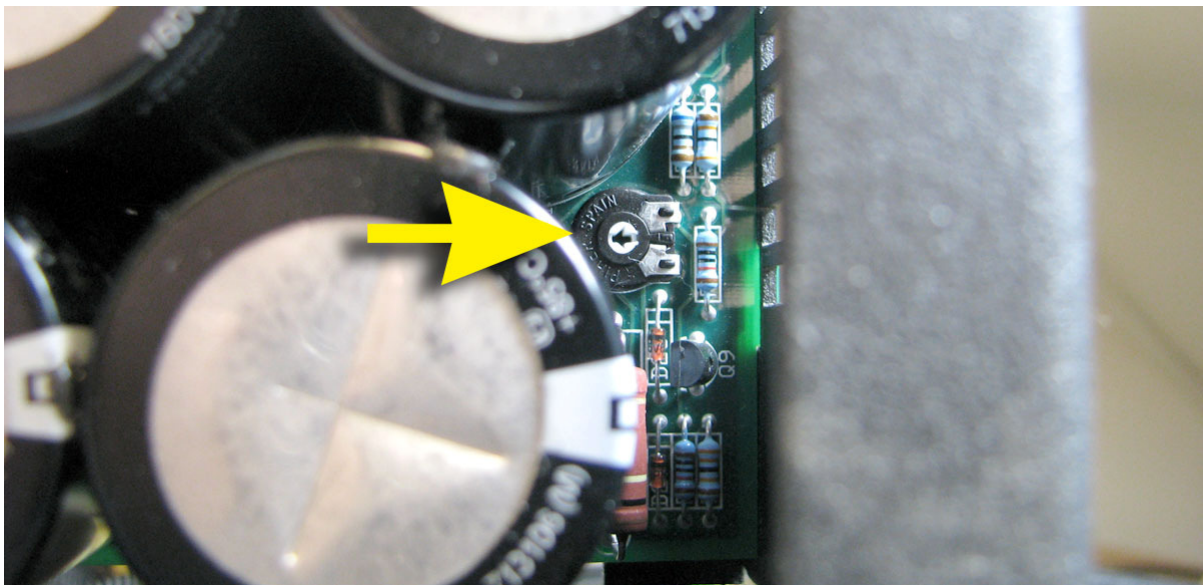


8.	Power supply frequency decreases, PAL led goes out.	23kHz	43µS
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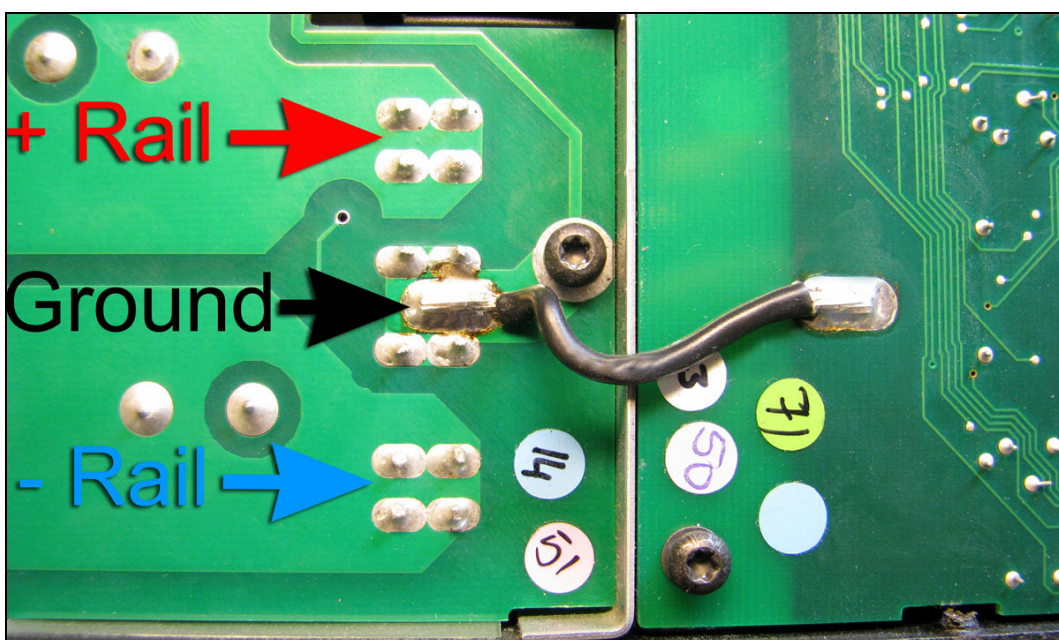
Step 9, 10

Only for C 16:4, C 28:4, C 48:4, C 68:4, C 88:4, FP 4000, FP 6000Q, FP 7000 & FP 10000Q.

9.	Begin turning voltage adjust potentiometer. At 174V (+/- 2V) power supply will stop.	ca +/- 174V	VR1-SP100F/ VR1-SP130F
10.	Adjust voltage.	+/- 160V	VR1-SP100F/ VR1-SP130F



Adjustment point

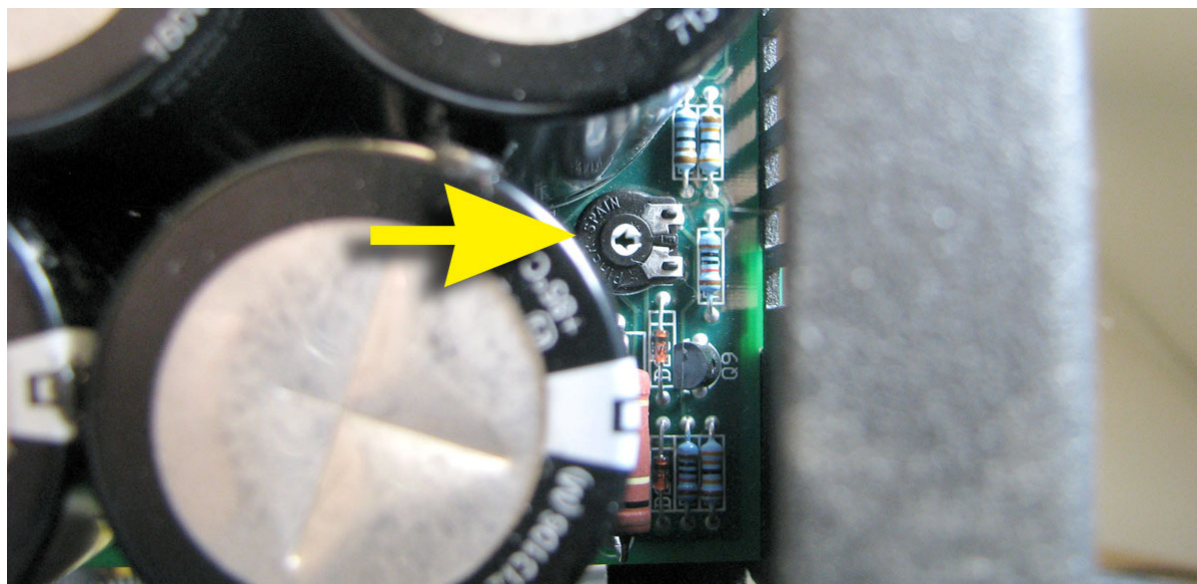


Measuring points

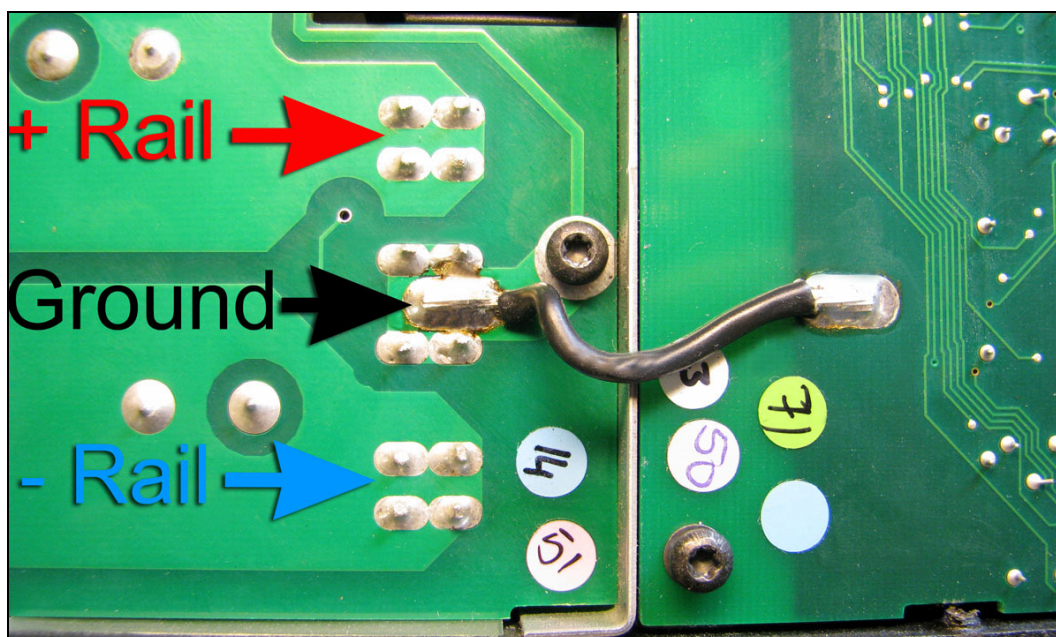
Step 11, 12

Only for FP 9000, FP 13000 & FP 14000.

11.	Begin turning voltage adjust potentiometer. At 220V (+/- 2V) power supply will stop.	ca +/- 220V	VR1-SP130F
12.	Adjust voltage.	+/- 200V	VR1-SP130F



Adjustment point

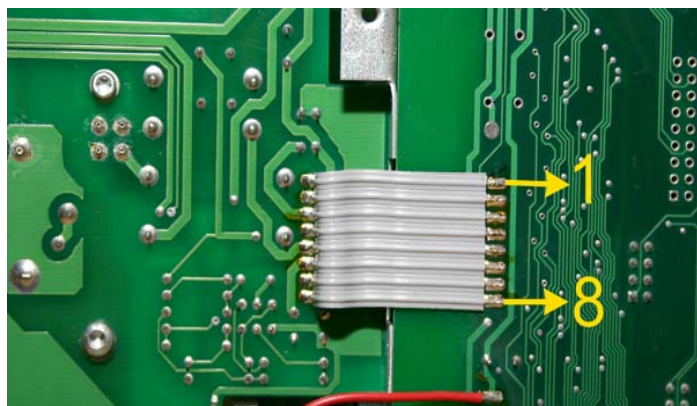


Measuring points

Step 13

Only for C 16:4, C 28:4, C 48:4, C 68:4, C 88:4, FP 4000, FP 6000Q, FP 7000 & FP 10000Q.

13.	Measure voltages according to chart:		
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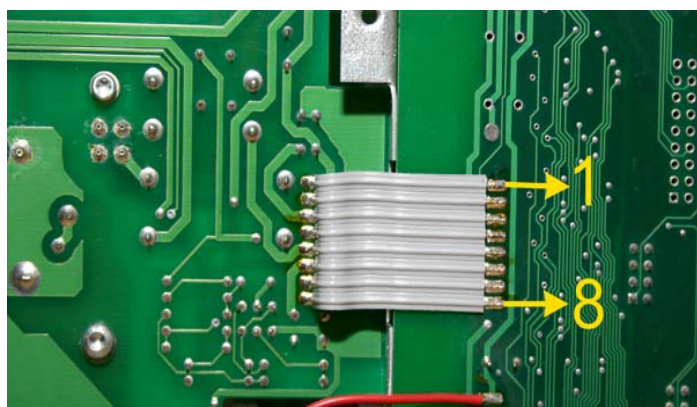


1	GND	-
2	ca 2V	Trafotemp
3	+25V	15VUnr
4	GND	-
5	+58V	50VUnr
6	-18V	50VUNrR
7	+15V	Pwrgood
8	+5V	PAL

Step 14

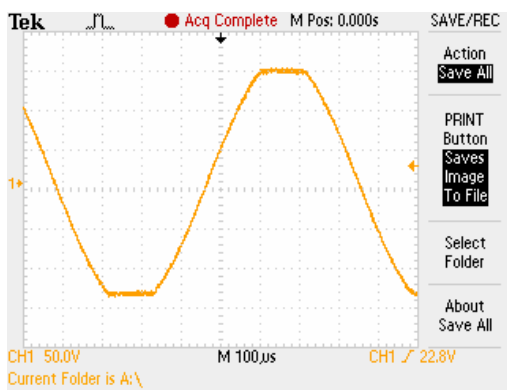
Only for FP 9000, FP 13000 & FP 14000.

14.	Measure voltages according to chart:		
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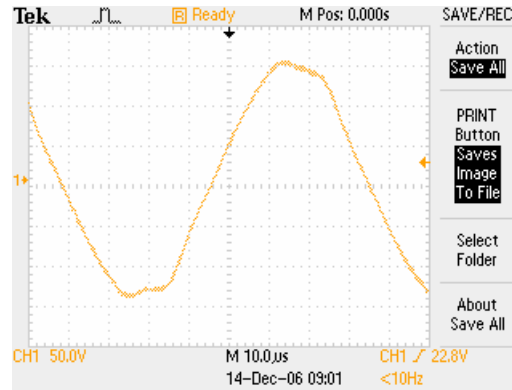


1	GND	-
2	ca 2V	Trafotemp
3	+22-23V	15VUnr
4	GND	-
5	+52-53V	50VUnr
6	-18V	50VUNrR
7	+15V	Pwrgood
8	+5V	PAL

15.	<p>Following tests are made for all Channels, check offset with no input +/- 40mV.</p> <p>Following tests are made for all Channels, check offset with no input and no load +/- 2V.</p> <p>Increase input signal and check output signal at clip 8Ω</p>		
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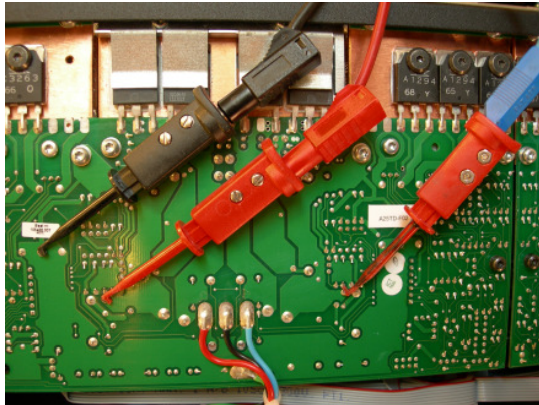


Wave measured at 1.3kHz.

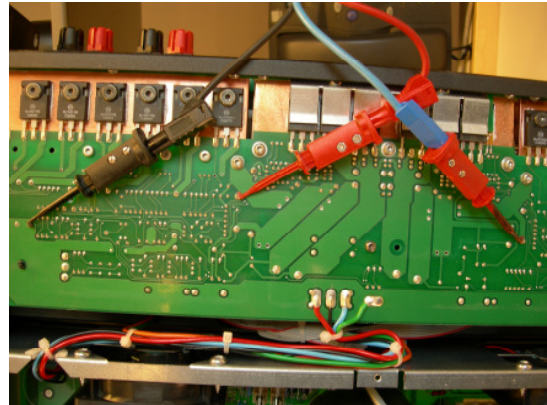


Wave measured at 13kHz.

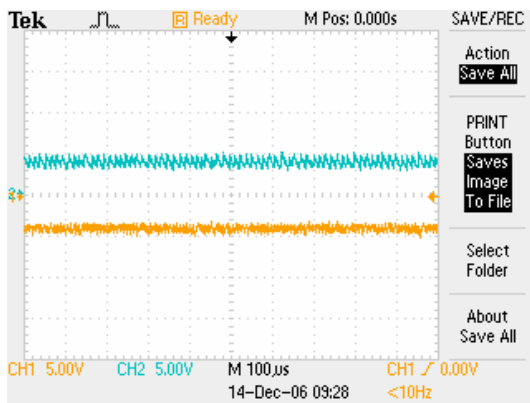
16.	Check HF-wave at 1.3kHz and 13kHz at 8Ω.		
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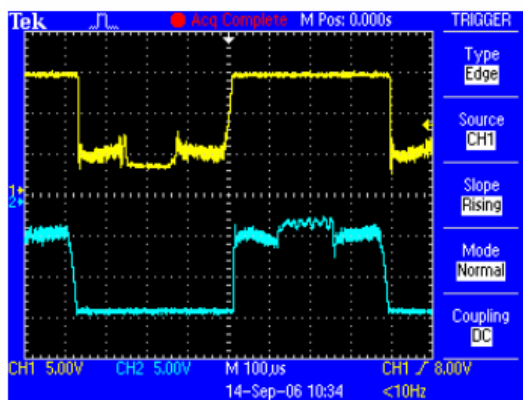
4 channel amplifier



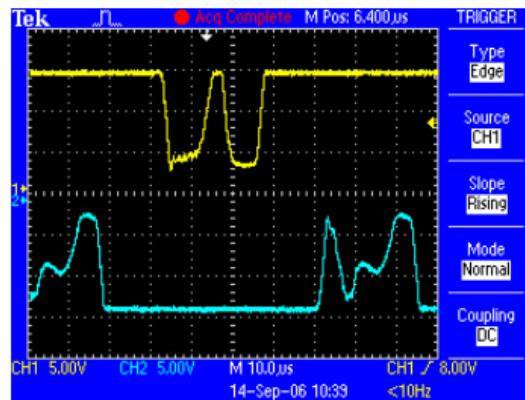
2 channel amplifier



No input signal

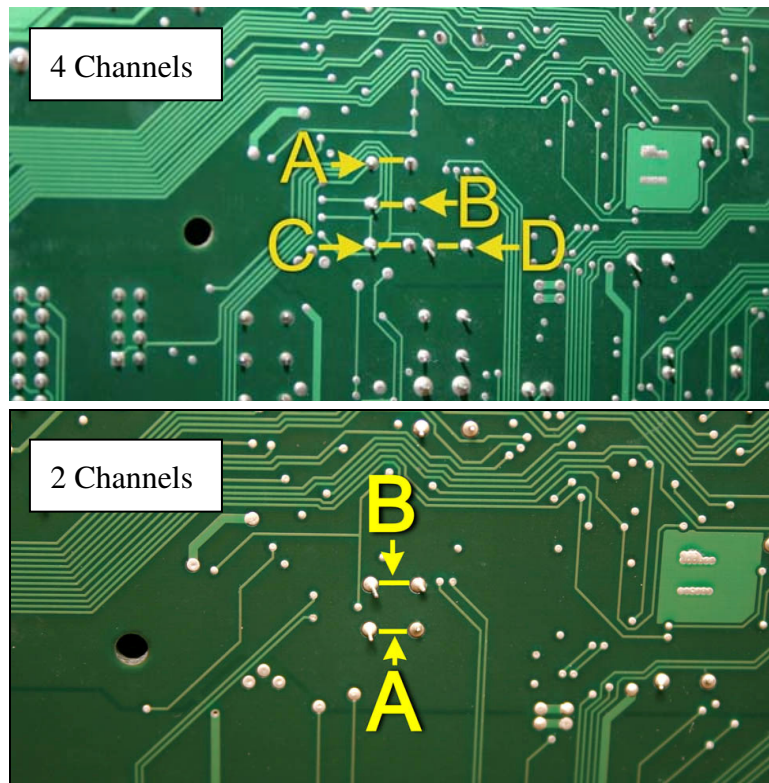


Clip 1.3 kHz.



Clip 13 kHz.

17.	Power supply frequency increases when loaded.	40kHz	
18.	Short capacitors according to pictures (Ch A=C1, Ch B=C101, Ch C=C201, Ch D=C301). Fans will increase speed, TEMP leds on front will light, Signal will go out.	AICO	



19) Check mains switch for bad contact (click noise).

20) Check gain potentiometers at front. No disturbance at output signal shall be detected when turning the potentiometer from one end point to the other end point.

21) Check dust filter, change when needed.