!WIP! Based on the A500 PSU schematic by Greg McCarthy (greg@gjmccarthy.co.uk, https://github.com/StormTrooper)

AC/DC line voltage DC stepped down D7 FR107 L2 1 White (-12V) Brown (12V) Black (GND) Red (5V) Yellow (Earth) SW1 SW_SPST 30R 220V 250V 1A C13 82uF L3 D8 SPR50 L3 C14 220uF C17 47uF +12VA +18V G1850 \downarrow L4 +12VA ₹ R10 100k H C18 1000uF C15 1000uF +18V D5 1N49 D10 GI850 TODO: White bulb, diode? C4 47u H U1 UC3844_DIP8 R7 150R C12 68n 5.0 0.04mH 0.3 Ω C1 10n -R16 200k R13 mH 2.53 Ω 8 9 0mH 2.41 Ω 20k \$ **-**VVV-R4 23k? C19 1uF -\\\ R3 23k? TODO: Re-check coil pins, doesn't make sense U3 TL431D TODO: Small blue block \$ 47R R14 PC817 D6 BZX55

Test of known good working PSU AC current measurements under load Tested on 240 VAC with dim bulb limiter Ticking sound under no load is normal

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5 VDC	12 VDC	240 V
0.00 A 4.90 V	0 mA 16.00 V	31 m/
0.00 A 5.10 V	i 70 mA 10.96 V	37 m∆
1.00 A 4.99 V	i 70 mA 11.89 V	68 m/
1.45 A 4.93 V	70 mA 12.10 V	97 m/
3 00 A A 70 V	70 mA 12 60 V	180 m

Test of known good working UC3844 PWM IC Pin 6 (OUT) Load on 5V output

1	Duty	Period	V max
0 mA	7.0%	i 276 ms	i 18.0
28 mA	4.0%	i 25 us	1 12.2
1.0 A	9.5%	25 us	14.8
3.0 A	15.0%	25 us	16.4
6.0 A	20.0%	25 us	19.0

P2N60 alternatives

GDS 600 V 2.9 A 70 W RDS(on) < 3.5 ohm Vgs +/- 20 V STP4NK60Z (4 A) STP5NK60Z (5 A) IRFBC30PBF (3.6A)

UC3844 Broken: p5-6 2 ohm Working: p5-6 16M ohm 2: 0 V 3: 1 V pulse after 1 s 4: 3 V 69 kHz (15 us) signal after 600 ms 5: 0 V 6: 13 V PWM 7: 16 V linear charge over 600 ms, drops to 11 V 8: 5.4 V after 600 ms



P-No: 391029-02 Board: 30501-001 A
Rating: UK 220-240 V 300 mA
Based on the A500 PSU schematic by Greg McCarthy

Nick Bolton

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