

ATX - Workbench Power Supply Project

by Jeff Manross – jeffmanross@hotmail.com – 614-519-7136

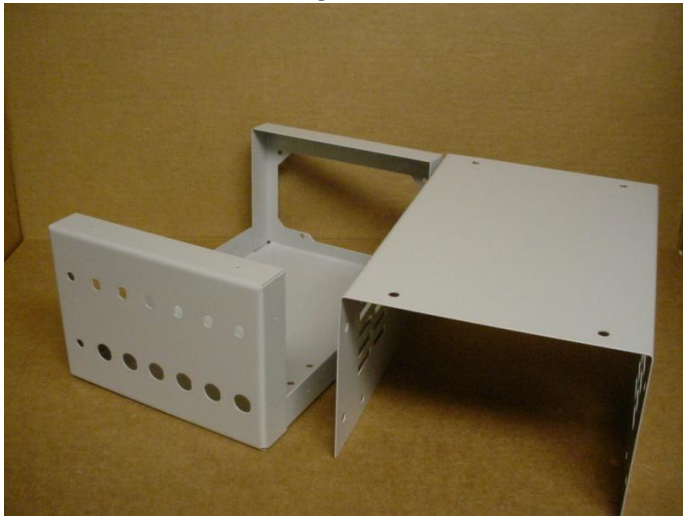
FROM THIS



.... TO THIS

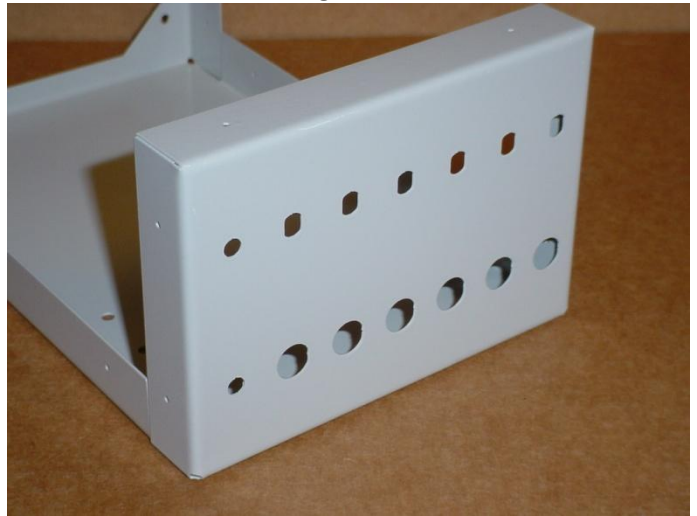


Figure 1



Enclosure

Figure 2



Front panel

Figure 3



Components needed

Figure 4



Finished front panel

PART LIST

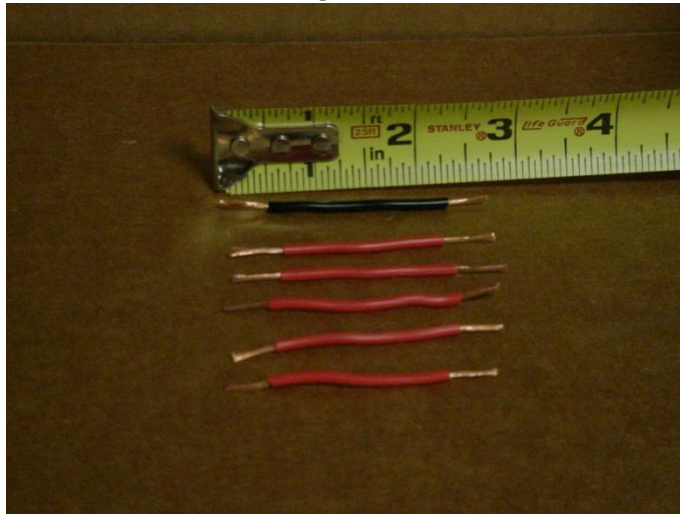
Qty	Description	Vendor	Part Number
1	Power Supply Enclosure	Technical Ingenuity(TING)	Call 614-519-7136
1	ATX Power Supply	www.geeks.com or local pc shop	Echo Star 450W 20-pin ATX or local pc shop scrap bin
1	ATX Power Supply Extension(20 pin)	www.ebay.com	Any Vendor – Shop for Price
6	Fuse Holder Body/Cap	www.digikey.com	F1488-ND
1	Binding Post – Black	www.digikey.com	J165-ND
1	Binding Post – Blue	www.digikey.com	J155-ND
1	Binding Post – White	www.digikey.com	J370-ND
1	Binding Post – Yellow	www.digikey.com	J372-ND
1	Binding Post – Red	www.digikey.com	J164-ND
1	Binding Post – Green	www.digikey.com	J371-ND
1	LED Red 5V	www.digikey.com	67-1648-ND
1	LED Holder	www.digikey.com	67-1332-ND
1	SPDT Switch	www.digikey.com	360-1887-ND
1	10 Ohm 10 Watt Power Resistor	www.digikey.com	RHRB-10-ND
1	330 Ohm Resistor	www.digikey.com	PPC330BCT-ND
1	Rubber Feet	www.digikey.com	SJ5012-0-ND
6	#6 or #8 - 1/4" Pan Head Screw	Home Depot	03069924681

Figure 5



Install all binding posts, fuse holders and switch
hot glue LED holder and LED in place

Figure 6



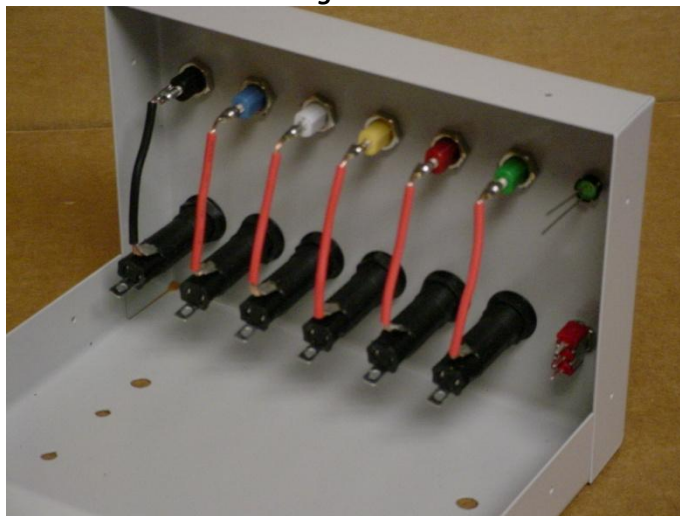
Cut and strip 6 (18ga) wires 2-3/4" (5 red – 1 black)

Figure 7



Solder wires to the fuse holders

Figure 8



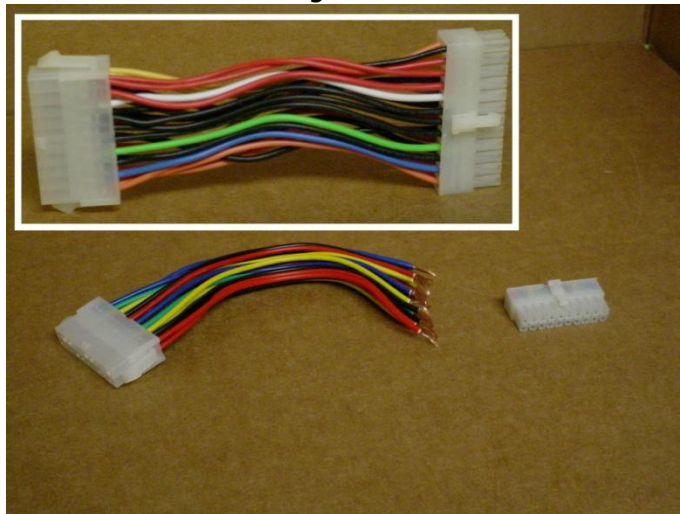
Solder wires to the binding posts

Figure 9



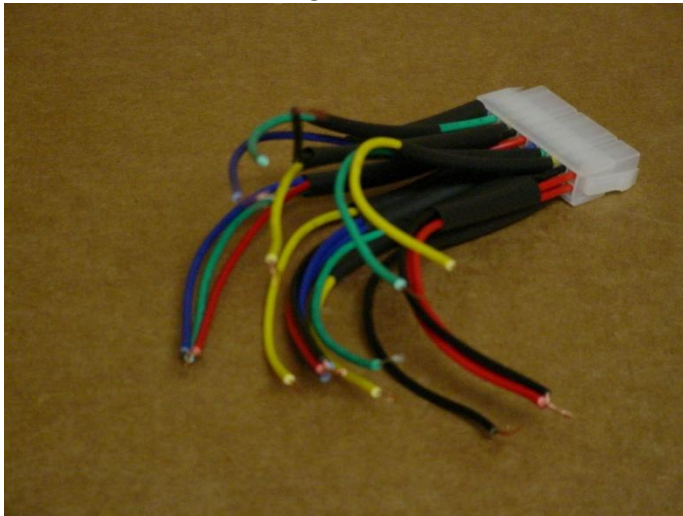
Purchase/Harvest ATX power supply
and 20 pin ATX power supply extension
(NOTE: The wire colors do not always match)

Figure 10



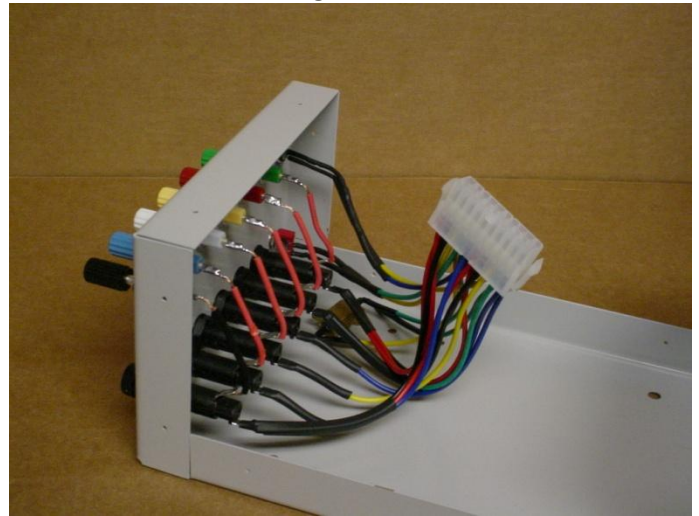
Cut off MALE side of extension and strip ALL Wires 3/8"
(NOTE: The wire colors do not always match)
it's best to refer to the wires by PIN NUMBER (see chart)

Figure 11



Pair up wires for soldering

Figure 12



Solder and heat shrink the ends

Figure 13



Connect the ATX power supply

Figure 14



Install screws for the ATX power supply

WIRE PAIRING CHART

CONNECTED TO	WIRE	SIGNAL	PIN	PIN	SIGNAL	WIRE	CONNECTED TO
GREEN BINDING POST	Orange	+3.3 VDC	11	1	+3.3 VDC	Orange	GREEN BINDING POST
GREEN BINDING POST	Brown	3.3V Sense					
BLUE BINDING POST	Blue	-12 VDC	12	2	+3.3 VDC	Orange	GREEN BINDING POST
CENTER POLL OF SPDT SWITCH	Black	COM	13	3	COM	Black	10 WATT POWER RESISTOR
BOTTOM POLL OF SPDT SWITCH	Green	PS-ON	14	4	+5 VDC	Red	10 WATT POWER RESISTOR
BLACK BINDING POST	Black	COM	15	5	COM	Black	BLACK BINDING POST
BLACK BINDING POST	Black	COM	16	6	+5 VDC	Red	RED BINDING POST
BLACK BINDING POST	Black	COM	17	7	COM	Black	330-OHM RES then to CATHODE of LED
WHITE BINDING POST	White	-5 VDC	18	8	POK	Gray	ANODE of LED (LONGER LEG)
RED BINDING POST	Red	+5 VDC	19	9	+5 VSB	Purple	NOT USED
RED BINDING POST	Red	+5 VDC	20	10	+12 VDC	Yellow	YELLOW BINDING POST

Step #1	Install binding posts, fuse holders, toggle switch and LED(hot glue in place) as shown in figure 5
Step #2	Cut wire (18 ga) 2-3/4" long, 5-red / 1-black, strip and solder to fuse holders and to bindings as shown in figure 6, 7 & 8
Step #3	Cut MALE end off the ATX extension and strip ALL wires as show in figure 10
Step #4	Pair up wires for soldering as show in figure 11 (follow the above WIRE PAIRING CHART)
Step #5	Solder the wires to the fuse holders, toggle switch and LED as shown in figure 12
#5-a	Solder 10 watt power resistor to PIN 3(COM/BLACK) and 4(+5VDC RED) – This creates a load on the power supply
#5-b	Solder PIN 5, 15, 16 & 17(COM/BLACK) together on fuse holder for BLACK binding post(COM/GND)
#5-c	Solder PIN 1, 2 & 11(ORANGE & BROWN WIRES) together on fuse holder for GREEN binding post (+3.3VDC)
#5-d	Solder PIN 19, 20 & 6(+5VDC/RED) together on fuse holder for RED binding post (+5VDC)
#5-d	Solder PIN 10 (+12VDC/YELLOW) on fuse holder for YELLOW binding post(+12VDC)
#5-e	Solder PIN 12 (-12VDC/BLUE) on fuse holder for BLUE binding post(-12VDC)
#5-f	Solder PIN 18 (-12VDC/WHITE) on fuse holder for WHITE binding post(-5VDC)
#5-g	Solder PIN 7 (COM/BLACK) to 330 ohm resistor and then to CATHODE (-)side of LED (SHORTEST)
#5-h	Solder PIN 8 (POK/GRAY) to ANODE (+)side of LED (LONGEST)
#5-i	Solder PIN 13 (COM/BLACK) to center post of toggle switch
#5-j	Solder PIN 14 (PS-ON/GREEN) to lower post of toggle switch (so toggle down position is OFF)
Step #6	PIN 9 (+5VSB/PURPLE) NOT USED – Cover with heat shrink tubing

Figure 15



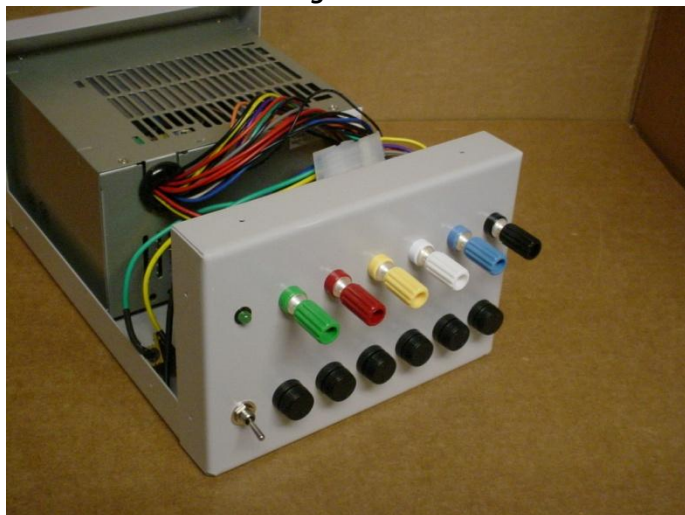
Double check wire clearance (Pinched wires are no fun)

Figure 16



Double check wire clearance (Pinched wires are no fun)

Figure 17



Double check wire clearance (Pinched wires are no fun)

Figure 18



Attach rubber stick-on feet to bottom corners

Figure 19

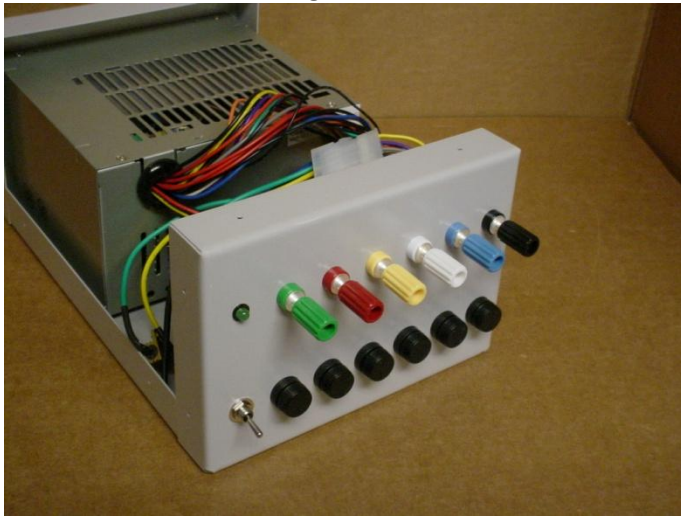


Figure 20



Install the cover

Figure 21



Install cover screws (#6 or #8 pan head 1/4")

Figure 22



Add a label for voltages and power switch on/off

The voltage label was made using a Brother P-Touch label maker – “3.3V(6 spaces)5V(6)12V(6)-5V(4)-12V(5)GND(2)OFF”
Trim the left side of the 3.3V and right of GND. Trim the OFF on each side to fit.