Breakout Board for ATX Power Supply - Benchtop Power Supply

This ATX Power supply breakout board enables users to use an ATX power unit as a benchtop power supply. The project can be very useful to power physical computing, embedded, microcontroller projects, etc. The board provides 4 different voltages 3.3V, 5V, 12V, -12V, and a slide switch is provided for output ON/OFF. All lines have LEDs. Basically, the project splits 20 or 24-pin ATX power supply connector into 4 different power lines. All outputs are accessible through banana connectors.

Note: The board can also be connected to a very old type of ATX SMPS with -5V output, in this case, use Jumper J1 to select the -5V and CN4 banana connector to provide -5V output. Otherwise, connect the Jumper J1 to GND and CN4 is available as GND output.
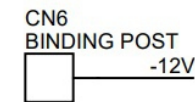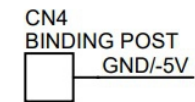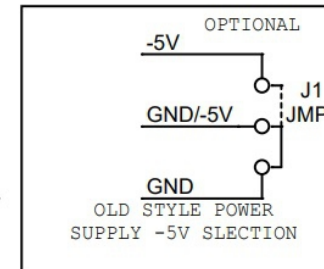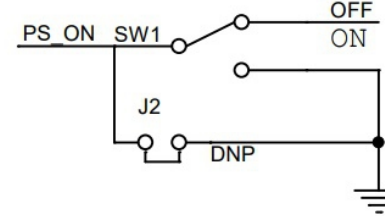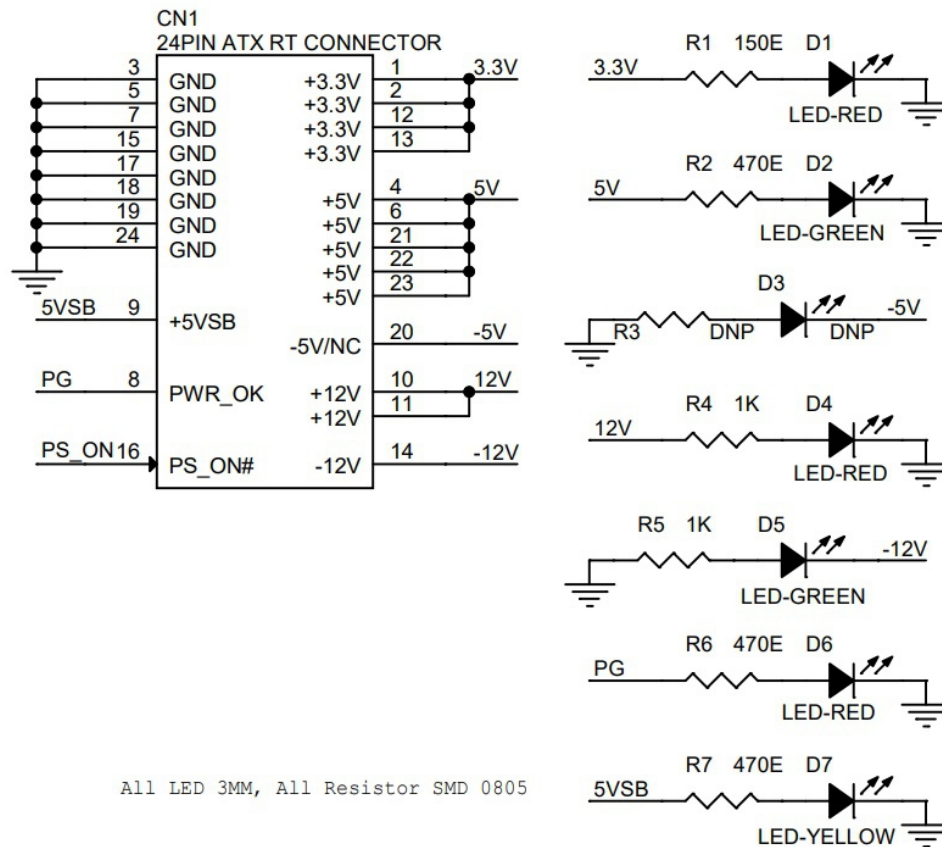
Connections and Components info

- D1 LED-Red Indicates 3.3V
- D2 LED-Green Indicates 5V
- D3 LED Do Not Install (Use with old style power supply with -5V Output)
- D4 LED-Red Indicates 12V
- D5 LED-Green Indicates -12V
- D6 LED-Red Indicates Power Goods
- D5 LED-Yellow Indicates Power Supply Standby Condition
- CN1 20 or 24 ATX Connector for Power In (Molex Digi-Key # WM20494-ND
- CN2 3.3V DC Output
- CN3 5V DC Output
- CN4 GND or -5V for Optional Old-Style Power Supply
- CN5 12V DC Output
- CN6 -12V DC Output
- CN7 GND

Key features of the project

- 20 or 24 ATX Connector as Input
- Outputs 3.3V, 5V, 12V, -12V, GND
- Load Current depends on ATX power Ratings
- 6X Banana Connectors for 3.3V, 5V, 12V, -12V and 3 X GND
- Power Good LED
- On/OFF Slide Switch
- LEDs for 3.3V, 5V, 12V, -12V
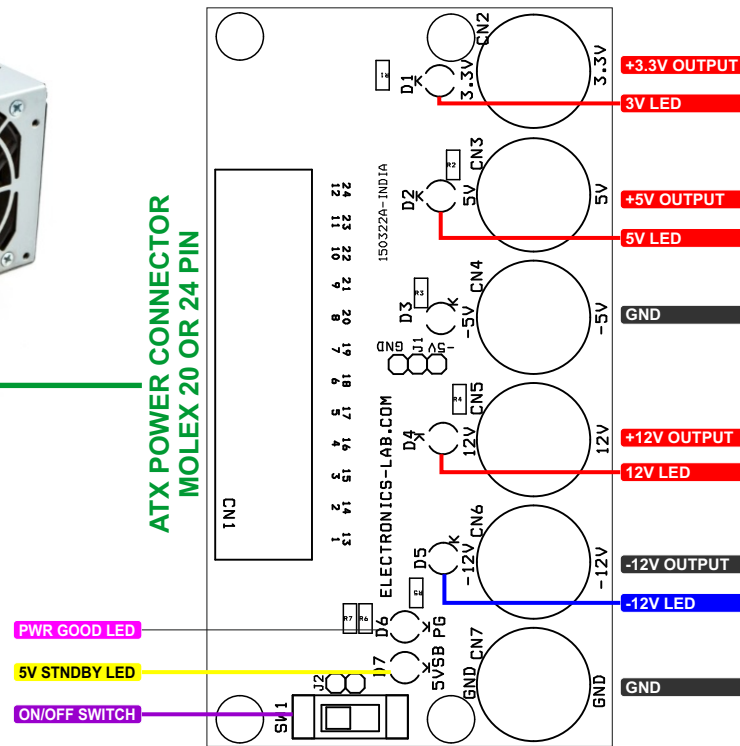- LED for Power Good Indication

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- LED for 5V Standby
- Board Can accommodate 20 or 24 Male Connector
- Banana Connector Holes 6.5MM with 13MM Solder Pads
- 4 X 4.2MM Mounting Holes
- PCB Dimensions 98.27MM x 53.34MM

ATX POWER CONNECTOR
MOLEX 20 OR 24 PIN

CN1

24 23 22 21 20 19 18 17 16 15 14 13
12 11 10 9 8 7 6 5 4 3 2 1

1S0322A-INDIA

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CN2
D1
3.3V
+3.3V OUTPUT
3V LED

CN3
D2
5V
+5V OUTPUT
5V LED

CN4
D3
-5V
GND
J1 -5V GND

CN5
D4
12V
+12V OUTPUT
12V LED

CN6
D5
-12V
-12V OUTPUT
-12V LED

D6 PG
PWR GOOD LED

CN7
D7 5V5B
5V STNDBY LED
GND

J2
SW1
ON/OFF SWITCH

GND

CN2

3.3V

D1

3.3V

CN3

D2

5V

CN4

D3

-5V

-5V GND

CN5

D4

12V

12V

CN6

D5

-12V

-12V

CN7

D6

5VSB PG

D7

GND

GND

J2

SW1

CN1

24 23 22 21 20 19 18 17 16 15 14 13
12 11 10 9 8 7 6 5 4 3 2 1

150322A- INDIA

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5V

3.3V

5V

-5V

12V

-12V

GND

SILK SCREEN TOP

BOTTOM LAYER

PCB DIMENSIONS 65.41MM X 40.32MM
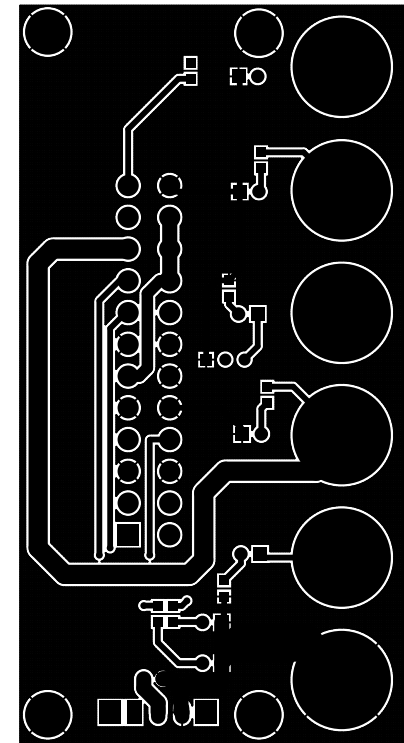
TOP LAYER

BOM					
NO	QNTY	REF.	DESC	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	24 PIN ATX RT CONNECTOR	MOLEX		
2	3	CN2,CN3,CN5	BANANA CONNECTOR RED	POMONA ELEC		501-1095-ND
3	3	D1,D4,D6	LED-RED 3MM	AMERICAN OCTO		2460-L314HD-ND
4	2	D2,D5	LED-GREEN 3MM	AMERICAN OCTO		2460-L314GT-ND
5	3	J2,R3,D3	DNP			
6	1	D7	LED-YELLOW 3MM	AMERICAN OCTO		2460-L314YD-ND
7	1	J1	3 PIN MALE HEADER PITCH 3.5MM	WURTH		732-5316-ND
8	1	R1	150E 5% SMD SIZE 0805	YAGEO/MURATA		
9	3	R2,R6,R7	470E 5% SMD SIZE 0805	YAGEO/MURATA		
10	2	R4,R5	1K 5% SMD SIZE 0805	YAGEO/MURATA		
11	1	SW1	SLIDE SWITCH	E-SWITCH		EG1903-ND
12	1	J1	SHUNT FOR JUMPER J1	SULINS CONNECT		732-5316-ND
13	3	CN4,CN6,CN7	BANANA CONNECTOR BLACK	POMONA ELEC		501-1094-ND