

ISSUE : TESTING ATX Power supply

Warning : This document is reserved to qualified persons and all manipulations are at your own risk.

To question : « **how can I start a stand alone ATX power supply for laboratory and testing purpose?** »

The Answer is locate **PIN #14 it is a GREEN** Wire. It holds +5V when ATX PS is powered. If you **GROUND** the pin, power supply will start.

SOME DETAILS :

Power Supply Connector

Figure 11 shows the connector pinout for the main ATX power connector. This board-mounted header may be implemented with a Molex 39-29-9202 or equivalent. This mates with the power supply connector, Molex 39-01-2200 or equivalent. All signals and power rails on the main power connector are required to be implemented. During power-up and power-down transitions, it is recommended that the 3.3VDC rails always be held at a lower potential than the +5VDC rails. This allows for improved reliability of motherboard designs at a reduced cost. Proper implementation of PS-ON, 5VSB, and PW-OK is **required** for an ATX 2.01-compliant power supply.

(ALSO MAIN 3.3V SENSE)	3.3V	⑪	①	3.3V
	-12V	⑫	②	3.3V
	COM	⑬	③	COM
	PS-ON	⑭	④	5V
	COM	⑮	⑤	COM
	COM	⑯	⑥	5V
	COM	⑰	⑦	COM
	-5V	⑱	⑧	PW-OK
	5V	⑲	⑨	5VSB
	5V	⑳	⑩	12V

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Power Signal Control Definitions

1 PS-ON

PS-ON is an active low signal that turns on all of the main power rails including 3.3V, 5V, -5V, 12V, and -12V power rails. When this signal is held high by the PC board or left open circuited, outputs of the power rails should not deliver current and should be held at a zero potential with respect to ground. Power should be delivered to the rails only if the PS-ON signal is held at ground potential. This signal should be held at +5VDC by a pull-up resistor internal to the power supply.

2 5VSB

5VSB is a standby voltage that may be used to power circuits that require power input during the powered-down state of the power rails. The 5VSB pin should deliver 5V \pm 5% at a minimum of 10mA for PC board circuits to operate. Conversely, PC boards should draw no more than 10mA maximum from this pin unless a power supply with higher current capabilities is clearly specified. This power may be used to operate circuits such as soft power control. For future implementation, it is recommended that the 5VSB line be capable of delivering 720mA. This increased current will be needed for future implementations with features such as “wake on LAN.”

3 PW-OK

PW-OK is a power good signal and should be asserted high by the power supply to indicate that the +5 VDC and +3.3 VDC outputs are above the undervoltage thresholds of the power supply. When this signal is asserted high, there should be sufficient mains energy stored by the converter to guarantee continuous power operation within specification. Conversely, when either the +5VDC or the +3.3VDC output voltages falls below the undervoltage threshold, or when mains power has been removed for a time sufficiently long so that power supply operation is no longer guaranteed, PW-OK should be deasserted to a low state. Figure 12 represents the timing characteristics of the PW-OK, PS On, and germane power rail signals.

4. Voltage Tolerances

Tolerance for the motherboard power rails should comply to the values listed

Voltage	Tolerances
+5 VDC	\pm 5%
-5 VDC	\pm 5%
+12 VDC	\pm 5%
-12 VDC	\pm 5%
+3.3 VDC	\pm 4%
+5VSB	\pm 5%

Full specification is available in document : “[ATX_standarts.pdf](#)”