picoPSU-80

12V, 80Watt ATX Power Supply

Quick Installation Guide

Version 1.0d
P/N picoPSU-80

Introduction

Based on an improved electrical design of the picoPSU-90, the picoPSU-80 is a small yet powerful and fully compliant ATX power supply designed to power a wide variety of low power motherboard from a single 12V regulated power source. picoPSU-80 has been optimized for the latest generation of power efficient Atom processors resulting in the highest efficiency at light loads while capable of peak power requirements to an impressive array of peripherals.
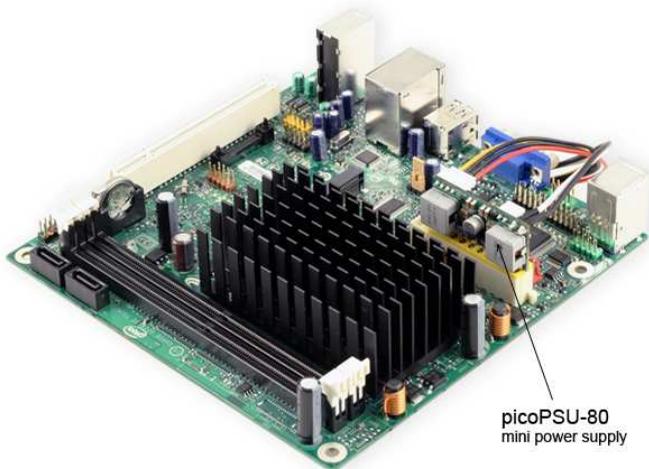
The PICOPSU-80 is the only snap power supply solution for general purpose motherboards. Compatible with an entire range of mini-ITX motherboards the picoPSU-80 provides cool, silent power for system. The PICOPSU-80 has many advantages over a regular power supply:

-Smallest ATX PSU to date
-100% silent operation
-Low heat dissipation with efficiency over 96%
-Plugs directly into the motherboard's power connector, no cable mess

Quick installation Instructions

The PICOPSU-80 has been specifically designed for the Mini-ITX form factor, thus eliminating the need for ATX power cables. It is also 1U compliant – height will not exceed 1U form factor.

1) After the picoPSU module was 'snapped in', hook the hard drive power or floppy power to your floppy/hard drives. If more hard drives or floppy connectors are needed, use a HDD/floppy "Y" splitter cable.

PicoPSU-80 shown with the D510MO Intel Motherboard.

2) Connect a 12 VDC power adapter (or any 12V source) to the DC-to-DC connector, center pin / white wire is positive (+).

3) Turn on the PC using the motherboard ON/OFF motherboard switch

Typical configuration

The picoPSU-80 has been tested with all mini-ITX board (VIA C3, VIA C7, low power AMD and Intel Atom) under virtually any disk / floppy / CDROM configurations. Additionally, the PICOPSU-80 can power low boards equipped with an 12VATX 4 pin connector (additional cable required). NOTE: The hard drive cable harness can be disconnected in case the user does not need any peripheral. Additionally, the cable harness can be made to any length or output connector type provided that the max load does not exceed 3A for GND return. Please look under specifications for the mating connector type.

Removing the picoPSU-80

In order to remove the picoPSU you must release the power connector latch and then remove the unit. Gently lift the picoPSU out from the ATX connector, by grabbing from the picoPSU PCB, not from components or the wire harness.

Specifications, picoPSU-80, 90Watts DC-DC ATX Power Supply

Power Ratings

Volts (V)	Max Load (A)	Peak Load (A)	Regulation %
5V	6A*	7A	+/- 1.5%
5VSB	1.5A	2A	+/- 1.5%
3.3V	5A*	7A	+/- 1.5%
-12V	0.05A	0.1A	+/- 5%
12V	4A	7A	Switched input
*At max load, forced air ventilation is required. For fanless or improper ventilation operation de-rate the output of the 3.3 and 5V rails until PSU temperature falls below 65C. Peak load should not exceed 60 seconds. Combined max power output should not exceed more than 95watts.			

Efficiency Ratings, 3.3 and 5V rail

CH1=5V	Efficiency (%)	CH2=3.3V	Efficiency (%)
1A	94%	1A	93%
2A	96%	2A	96%
5A	94%	5A	92%
7A	86%	7A	86%

Input Requirements: 12V regulated, min=1A, max=10A (load dependent). Over-voltage shutdown will occur at ~13-13.5V.

Size: 44.5mm(L) * 20mm(W) * 30mm (H) (1U compliant)

Weight: 45gramms, including cable harness, 20 grams without cable harness.

DC-Jack: Female, panel mount, 2.5*5.5*10 mm.

Connectors
Molex 39-01-2200 compatible, two 3.5" drive power connectors (PATA and SATA) and one optional P4-12V 4 connector (mini-fit JR 4p). Header and mating connector for the removable cable harness can be found at: http://www.jst-mfg.com/product/pdf/eEH.pdf

Overload protection
Over load protection will be effected when either of the loads (+5V & +3.3V) exceeds > 150% Max Load.

Turn-on Delay
After turning on, at least 20 ms will be needed for the rise of +5VSB output voltage (measured from 10% to 95%) to reach its peak.

Remote ON/OFF control (PS_ON)
Logic level is LOW - Output voltage is enabled (PS_ON pin)
Logic level is HIGH - Output voltage is disabled (PS_ON pin)

PWR_GD
Logic level is low: PWR_GD=OK
Logic level is high: PWR_GD=not OK (10.5V<V(in)>13.5V or other fault conditions)

Operating environment: Temperature: -20 to 65 degree centigrade.
NOTE: Thermal shutdown occurs at 105-115C.
Relative Humidity: 10 to 90 percent, non-condensing.

Efficiency, MTBF: MTBF >60K hours at PSU(temp) < 65 Celsius

Shipping and storage: Temperature -40 to +65 degree centigrade. Relative humidity 5 to 95 percent, non-condensing

Warranty
1 Year Limited Warranty statement. Warranty is void if maintenance or calibration is performed by end-user or by use in conjunction with power modules not provided by mini-box.com.

Support: Email: support@cartft.com
Web Site: http://www.CarTFT.com