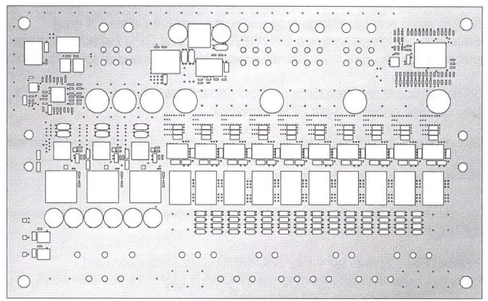
EVGA

"The Untouchables™"

EPower Board

Quick Start Guide

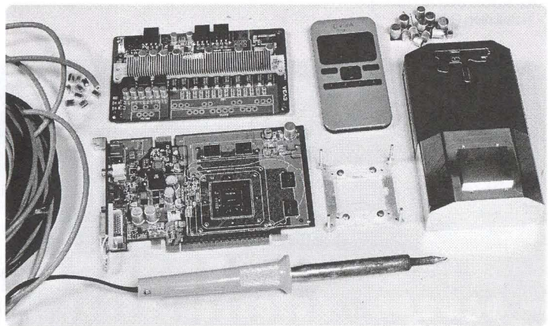


Minimum requirements

Minimum 600W (42A on +12V rail) power supply with two or three 6-pin PCI-Express supplementary power connector cable for each EPOWER board used in system.

Recommended toolkit for installation and usage (not included, must be acquired separately)

- AWG12 or AWG10 copper wire with insulation
- 60 or 80W soldering iron
- Digital multimeter for resistance and voltage checks
- EVGA EVBOT with X58 firmware
- 80 or 120mm +12V DC FAN with 3-pin header for VRM cooling
- Flux and solder for wire joints
- Insulation materials to prevent moisture on VRM



Testimonials

http://kingpincooling.com/forum/showthread.php?t=1412

http://kingpincooling.com/forum/showthread.php?t=744

http://www.evga.com/forums/tm.aspx?m=1275671&mpage=1

This device is intended only for advanced user use with basic electronics experience. EPOWER board is covered only by DOA warranty

EVGA "The Untouchables™" EPOWER board is separate VRM board to provide additional power for target devices, such as videocard, motherboard or other devices which may need high-current low-voltage power source.

EPOWER board is designed to operate with two voltage outputs :

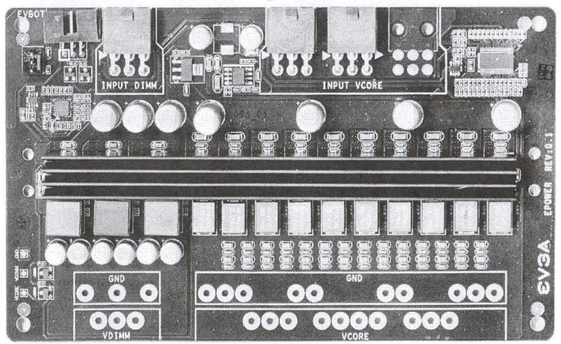
VCORE output– Voltage adjustment range of 800mV to 2000mV.
Current source up to 400 A.

VDIMM output – Voltage adjustment range of 1000mV to 5000mV.
Current source up to 80 A.

Included Equipment

The following equipment is included in the EVGA "The Untouchables™" EPOWER board.

- EPOWER BOARD REV:0.1
- Installation Guide



Connecting to the device

1. Disconnect stock VRM power inductor on desired channel.
2. Open copper plane for ground and power on target device.
3. Solder thick (AWG10-AWG12) wires from EPOWER GND to ground and VCORE or VDIMM points to power.
4. Default startup voltage on VCORE – 1200mV, VDIMM – 1500mV. Maximum current for VCORE – 400A, VDIMM 80A.
5. Good rule to follow – one pair of wires (VCORE+GND) per each 10-15A. For simple VGA like with 2-3 phase VRM best to use 4-8 wire pairs. For high-end VGA should be no less than 10-15 wire pairs. Top GPUs like GF100, GF110 must use as many pairs as possible physically.
6. Multiple wires reduce voltage drop under idle and load states. If drop (difference of voltage between EPOWER board and GPU capacitor voltage near package) is more than 100mV – more wires are needed to compensate.
7. EPOWER board requires forced airflow under heavy load conditions. User can use onboard 3-pin FAN connector.
8. After connecting EPOWER to GPU always check resistance between power and GND to ensure no shorts. Normal resistance range for GPU is 0.5-10 ohm, for memory – 5-200 ohm.
9. For videocards with advanced PWMs (>3 phase) check VR_ENABLE signals and VR_PGOOD (power good).
10. Connect PCI-Express power to EPOWER board AND videocard. If you don't use secondary power on EPOWER (3phase) you can leave "INPUT DIMM" connector not connected.
11. If after power on voltage is OK, but system does not detect videocard – cut VR_PGOOD trace near onboard PWM on videocard. This will prevent onboard VRM to reset GPU (because onboard power is not used – it's fault state for it)
12. For voltage adjustment on EPOWER use EVGA EVBOT with X58 motherboard firmware. VCORE voltage is CPU Voltage, VDIMM is Memory voltage on EVBOT.
13. Keep moisture away from VRM card, ensure there is no direct contact to frozen areas on the target device.