

EVGA GeForce GTX 780 Ti CLASSIFIED K|NGP|N Edition OC guide

Reinventing power delivery

EVGA GeForce GTX 780 Ti CLASSIFIED K|NGP|N is the only card on market which is capable of handling GPU load over 1000W under extreme OC conditions. This was achieved by using unique power delivery layout and only highest quality components, such as Japanese solid capacitors, rare metal SMT capacitors on vital locations and custom layout design.



Robust VRM with advanced controls

Classified VRM equipped with digitally-controlled 14 phases for unmatched GPU power capacity and 3 phase memory power module able to handle anything you can imagine. For extreme users card already bundled with detachable VRM heatsink designed to keep power components cool.

Fully custom PCB design

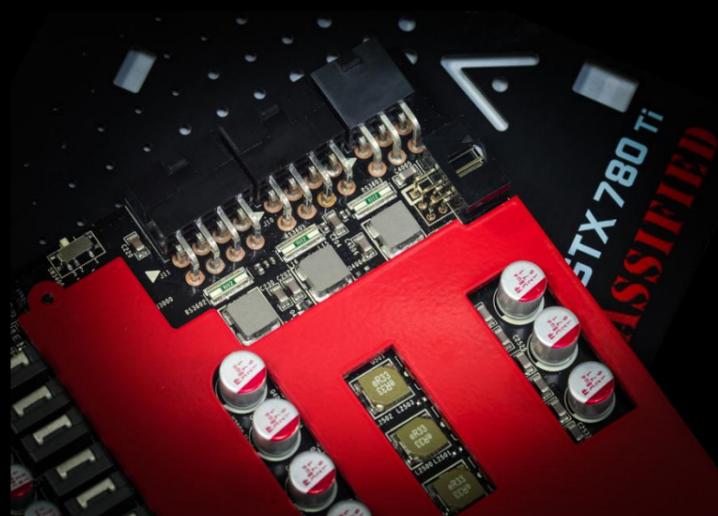
Layout is completely customized specially for EVGA GeForce GTX 780 Ti CLASSIFIED K|NGP|N graphics adapter to overcome low input power constrains of reference design. While on stock cooling difference may not be always seen, it's become more and more obvious while pushing clocks to limits, particularly with watercooling. Improved layout allows sky high speeds on extreme cooling, and help to keep thermals and power margins within specs for everyday aircooling/watercooling usage.

Efficient and quiet for everyday use

Even while design is tuned for extreme performance without boundaries, ability to deliver top-notch everyday performance with stock cooling was improved. Power regulation circuitry constantly measures power levels and adjust power draw and capacity automatically, keeping low power draw under normal conditions. EVGA ACX Cooling solution provides fine balance with thermals and acoustics, effectively dissipating heat from all onboard components.

Performance

Even with improved performance levels available right off the box, design still capable to deliver more speed when needed. Average achievable clock for graphics adapter vary from thermals and power availability, but common points can be referenced to table in this guide



	EVGA ACX Aircooling	High-performance watercooling	Liquid nitrogen, -100°C
GPU stable boost clock	1200 MHz	1350 MHz	1750 MHz
Memory stable clock	7400 MHz	7600 MHz	7800 MHz
Memory voltage	1.700 V	1.725 V	1.85 V
PEX voltage	1.100 V	1.15 V	1.25 V
3Dmark11 Performance	15000	17000	21000
3Dmark FireStrike Extreme	6000	6200	7600

Test system used: Intel Core i7-4960X @ 4500MHz, EVGA X79 DARK, 4x4GB DDR3-2666, Windows 8.1 with 331.75 NVIDIA driver.

Important note: overvoltage on graphics card components instantly violates warranty and provided "AS IS" only in educational purposes.

Tuning knobs

EVGA Precision X

EVGA provide comprehensive GPU tuning toolkit Precision X, which allows adjusting clocks, power limits, fan settings and many more. Precision X is main tool for performance tuning and fully enabled for all GEFORCE series graphics cards. Latest EVGA Precision X software is always available online at www.evga.com/precision website.



Power tuning

There are three main voltage rails which can be tuned individually: NVVDD for GPU logic power, FBVDD for memory power and PEXVDD for various onboard interfaces and PCI-express link power. Increasing FBVDD might be useful for high memory frequencies. PEXVDD can be left at nominal level for stock and watercooling, it may only need adjustment for subzero cooling scenarios. EVGA EVBot with GTX780 CLASSIFIED K|NGP|N firmware can be used for these adjustments on-fly, at any time. No real-time OS/software support required for EVBOT functions.

Bonus package

Precision X K-boost feature allows to engage boost clocks in any loading scenario, even idle, unless limited by thermal or power levels. This helps during extreme overclocking to maintain GPU stability under idle/loading changes.

Custom metal backplate bundled with card for even greater aesthetics and protection of components on graphics card PCB.

Onboard monitoring header available for precise voltage readout with external DMM. ProbeIT header J3900 is located near status LEDs and BIOS switch on top PCB edge. Bundled adapter allows easy connection to standard multimeter probes.

Pin 1 (near GPU)	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10 (near power inputs)
NVVDD	GND	FBVDD (memory)	GND	PEXVDD (PLL)	GND	+3.3V input	GND	+12V input	GND

GPU LED - shows voltage health for GeForce GTX 780 Ti graphics processor. Bright white glow indicates normal operation.

MEM LED - shows voltage health for graphics memory. Bright white glow indicates normal operation.

PLL LED - shows voltage health for auxiliary PCIe/PLL voltage rail. Bright white glow indicates normal operation.

+3.3V LED - shows voltage health for onboard +3.3V power input from motherboard. Bright white glow indicates normal operation.

+12V LED - shows voltage health for +12V power input from PSU. Bright white glow indicates normal operation.

More information:

www.evga.com/kingpin - EVGA GEFORCE GTX 780 Ti Classified K|NGP|N page

www.KINGPINCOOLING.com - extreme cooling gear for LN2 and Dry Ice

www.3dmark.com/hall-of-fame - world-wide Futuremark benchmark best scores ranking