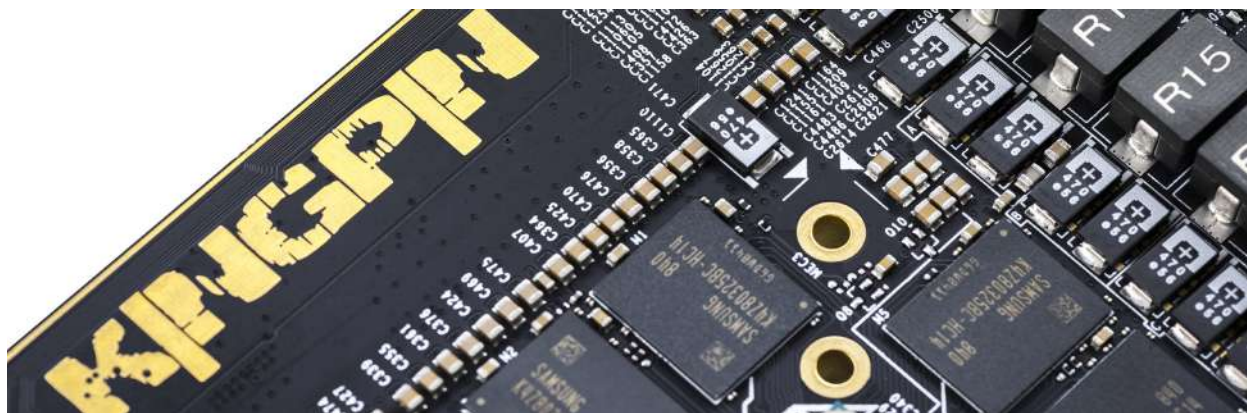


EVGA

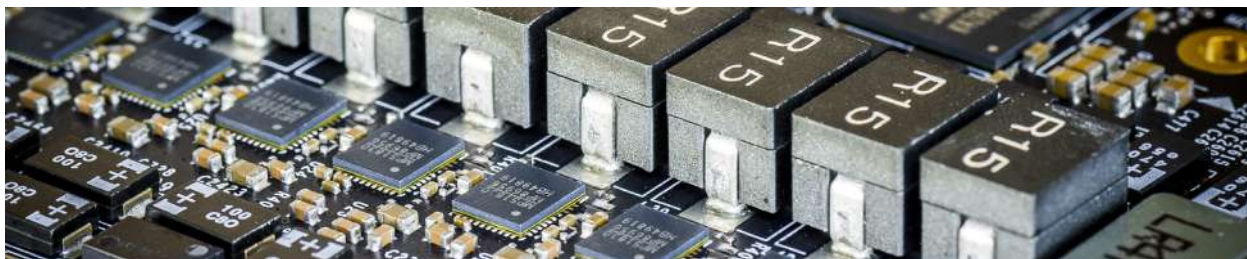
GEFORCE RTX 2080Ti K|NGP|N

Edition OC Guide



RTX card LN2-ready out of the box

K|NGP|N Edition graphics cards have set THE standard for what a true overclocking performance product should be. Upholding legacy of previous K|NGP|N Edition GTX 780Ti, GTX 980, 980 Ti and 1080Ti, this is latest addition with all new RTX 2080 Ti GPU. It brings you high capacity digital power train, better than ever thermal performance, and fast Samsung GDDR6 memory. There are many features exclusive to this card, such as voltage tuning control, Probelit sensor port, voltage status LEDs, EVBOT, single-slot compatibility, power connector location for clean modding builds.



Generation 4 of the KPE VRM 16+3 phase power design

TU102-300A “Turing” core redefined power delivery with 16+3 phase power train using flexible digital MPS controller. Each of those phases support 60A peak current capacity, matching the GPU demands during extreme OC. Three phase memory power solution is over engineered for lowest ripple to support high GDDR6 clocks. For extreme users, the card baseplate is separated into modular VRM heat sinks to enable aftermarket watercooling, phasechange and LN2 blocks. Make sure to read thru the instruction manual and detailed OC information if you are planning to use it this way.

Redefined 12-layer PCB supports great thermals and performance

The PCB is the most important component of the graphics card, bridging all the components together without introducing excessive cross-talk and coupling. Larger PCB sizes help to spread heat and provide ample room for 11 temperature sensors in critical areas for thermal monitoring at any time. Power settings such as core and memory voltage droop, thermal override, and voltage offsets can be customized thru HW using onboard switches or by software controls when tuning for best overclocking results.

Watercooling by default for the silent performance

Turing GPU boost clock adaptive mechanism benefit from cooler temperatures, and watercooling has a way to get best cooling while keeping the system silent 24/7 under heavy load conditions. This is the first card in the series that has a factory hybrid cooler configuration. KPE also has no stacked display connectors, so the card can fit even slim builds and HTPC rigs using single-slot bracket.

Average achievable clocks for this graphics adapter can vary from card to card. GPU qualities such as leakage, thermals, and power usage will ultimately determine a card’s overclockability throughout the whole cooling range. The table below shows typical results:

EVGA GeForce RTX 2080 Ti KINGPIN Edition OC setting reference (may vary depends on system config)

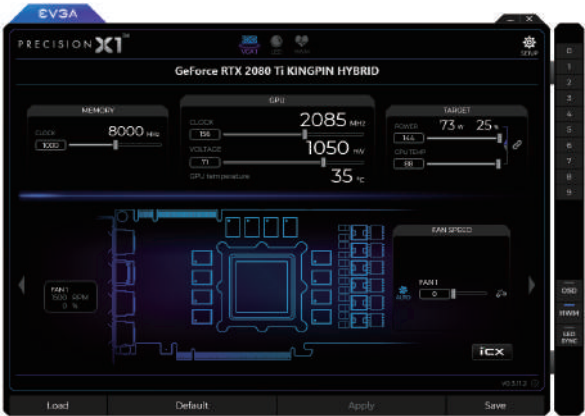
	EVGA RTX KINGPIN	Hydrocopper watercooling	Liquid nitrogen, -150°C
GPU stable boost clock	Over 2+ GHz	Over 2.1+ GHz	2500+ MHz
Memory stable clock	8000+ MHz	8100+ MHz	8300+ MHz
Memory voltage	1.37 V	1.43 V	1.55 V
3Dmark Time Spy	15000+ pts	15700 pts +	18000 pts +
3Dmark Time Spy Extreme	7400 pts	7700 pts +	9000 pts +

Test system used: Intel® Core™ i9-7980XE @ 4500MHz, EVGA X299 DARK, 4x8GB DDR4-4000, Windows 10 with 417.35 NVIDIA driver.

Important note: modification of graphics card components instantly violates the GPU warranty and these suggestions and tips for overclocking are provided "AS IS", and only for educational purposes. Please do not RMA graphics cards which have modified components or any PCB tampering.

EVGA Precision X1

EVGA provides a comprehensive GPU tuning tool called Precision X1, to control and monitor many variables on the card including clocks, voltage, power limit, and fans speed, profiles. Precision X1 is the main software tool recommended for performance tuning on any EVGA graphics card, including K|NGP|N editions and is also fully enabled for all GEFORCE series GPUs. Precision X1 tuning and monitoring software is always available online at <https://www.evga.com/precisionx1/> website.



Power tuning

All main voltage rails can be tuned individually: NVVDD for GPU core, FBVDD for memory and PEXVDD for various onboard interfaces and PCI-express link power. Slight increase of memory voltage is useful for higher memory frequencies. Increasing memory and PEX voltages simultaneously, can help in achieving higher core + memory frequencies at the same time, while doing XOC.

Bonus Features

The onboard monitoring header is available for precise voltage readouts with an external Digital Multi Meter (not included). Included PROBE IT header J20 is located near status LEDs and BIOS switch on PCB’s top right corner. PROBE IT test leads adapter is bundled with each KPE card and EVGA DARK motherboard.

Pin 1	NVVDD	Pin 6	GND
Pin 2	GND	Pin 7	+1.8V input
Pin 3	FBVDD (memory)	Pin 8	GND
Pin 4	GND	Pin 9	+12V input
Pin 5	PEXVDD (PLL)	Pin 10	GND

More information available at:
<https://www.evga.com/> - EVGA website page
<https://KINGPINCOOLING.com> - OC/XOC support on KP edition cards and Extreme cooling gear for LN2 and Dry Ice
https://xdevs.com/guide/2080ti_kpe/ - Extreme OC Guide for EVGA GeForce RTX 2080 Ti K|NGP|N
www.3dmark.com/hall-of-fame-2 - World-wide Futuremark benchmark best scores ranking



Installation Guide