

GAINWARD

Premium Brand of #1 NVIDIA Board Partner



Gainward GeForce GTX 980 Phantom

Specifications

Process Technology	28nm	Base Clock	1203 MHz
Processor Cores	2048 cores	Boost Clock	1304 MHz
Memory Amount	4096MB	Memory Clock	3600 MHz
Memory Type	256b GDDR5	Memory Bandwidth	230.4 (GB/Sec)

Key Features

- Next generation NVIDIA Maxwell architecture
- NVIDIA GPU Boost 2.0
- NVIDIA Dynamic Super Resolution technology
- NVIDIA MFAA technology
- NVIDIA GameStream technology
- NVIDIA GameWorks technology
- NVIDIA SHIELD ready
- NVIDIA Adaptive Vertical Sync
- NVIDIA G-SYNC ready
- Microsoft DirectX 12 support
- NVIDIA PhysX technology
- NVIDIA CUDA technology
- NVIDIA 3D Vision and NVIDIA Surround ready
- NVIDIA SLI technology
- PCI Express 3.0 support
- OpenGL 4.4 and OpenCL support
- Support for four concurrent displays



Output Support



mini HDMI
mini DP *3
DVI-I

Dimension

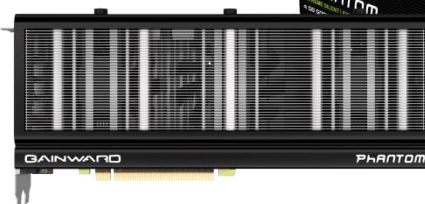
Board: 274mm(L)x112mm(W)
Cooler :2.5 slot
Bracket: 2 slot

Accessory

1. Driver Disc
2. Manual
3. Power cable
4. DVI to VGA dongle



4096MB



Gainward Unique Features

- Phantom cooler with Removable fan design



The new Phantom comes with brand new fans design (patent M456684/ZL201320139962.6) that includes

- 1) Removable fan design – each fan body can be removed to clean if necessary
- 2) 5 pieces of 8mm copper heat-pipe and copper base - better thermal performance
- 3) solid structure

- Expertool II



Gainward's Expertool II – the brand-new utility adds flexible fan curve control and BIOS saving feature for powerful GTX 980 card.

Minimum system requirements

Graphics card require:

- PCI Express-compliant motherboard with two and half width x16 graphics slot
- One 6-pin and one 8-pin PCI Express supplementary power connectors
- Minimum 500W or greater system power supply
- Microsoft Windows 8, 7, Windows Vista

GW GTX980_Phantom_bar code: 426018336-3378



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■ Phantom cooler with Removable fan design

Gainward GTX 980 Phantom, continue the elegant design of the Phantom cooler. The new Phantom comes with brand new fans design (patent M456684/ZL201320139962.6) that includes

- 1) Removable fan design – each fan body can be removed to clean if necessary
- 2) 5 pieces of 8mm copper heat-pipe and copper base - better thermal performance
- 3) solid structure

With this new outstanding innovated thermal design and optimized product design Gainward GTX 980 Phantom delivers an extreme gaming performance for enthusiast gamers.

■ Extreme silent acoustics in heavy loading mode

With the new Phantom cooler, Gainward GTX 980 Phantom with factory over-clocked speed gets **5.6dB** quieter than reference board under full load operation.

■ Extreme cool temperature in heavy loading mode

Thanks to the new Phantom cooler, Gainward GTX 980 Phantom with factory over-clocked speed performs **5° C** lower GPU temperature than reference board with reference clock.

■ 5 Ports

Dual-link DVI-I
 mini DP *3 (v1.2)
 mini HDMI (v2.0)



- Five display ports located in a row, leave enough space on the top for the hot air to flow out (adding 40% space than previous generation – GTX 780/780 Ti). This can benefit the cooler performance that lower the GPU temperature or lower the acoustic level.
- All the connectors are metal-shielding, for EMI shielding and dustproof.
- Five display ports provides users flexible configuration for multi-monitor system.
- miniDP port *3 - DP port becomes popular on NB and desktop PC. NB/PC uses miniDP (or ThunderBolt – same physical spec. as miniDP) to save space, and more and more high end monitor to feature miniDP as well as DP
- miniHDMI – miniHDMI is so popular on mobile device now, so it is even easier to get miniHDMI to HDMI cable than a HDMI to HDMI cable

■ Superior Hardware Design

With the experience of the Gainward's award winning high-performance/wide-bandwidth hardware design, GeForce GTX 980 Phantom, again, with re-designing the entire hardware, that brings –

- 1) lower energy loss
- 2) lower EMI level
- 3) higher stability under high current operation (heavy loading operation).

■ Factory Over-clocked

Gainward GeForce GTX 980 Phantom works not only much higher clock speed than reference board - offers unbelievable performance but provides reliability and extra over-clocking capability.

■ 8 Phases PWM

Gainward designs eight phases for GPU core that helps to supply more fuel to the 3D graphics engine and share the current load on each phase also reduce the temperature of those phases. With those 8 phases work together, Gainward GTX 980 Phantom can be over-clocked easily and safely, the overall efficiency can be improved, the choke noise and EMI noise also be reduced.

■ DrMOS

Gainward continues using DrMOS in those 8 phases PWM for core power circuit. DrMOS is designed to handle high current with low noise operation and less heat generating.

■ Expertool II



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