EVGA e-GeForce 7800 GT (N518)

A bit about the GeForce 7800 GT

At the QUAKECON 2005 held in DALLAS, TX NVIDIA unleashed its second new GeForce 7 series product upon the world. Its name was the GeForce 7800 GT, and it is prepared to kick some.

Just 2 months prior to the unveiling of the GeForce 7800 GT, NVIDIA had treated fans to the release of the GeForce 7800 GTX, which is the first product to hail form the new GeForce 7 series to win the performance crown in the video card domain. At the same time, ATI's next generation GPUs – the RADEON X1000 series - were still undergoing development back at the factory due to problems related to the new 90nm process. The most powerful model ATI could muster at that time was still the RADEON X850 XT PE, which was easy pickings for NVIDIA's new flagship video card.

With the absence of any real competition, the GeForce 7800 GTX's astronomical price tag (official MSRP $599) was set too high for even some of the most enthusiastic of enthusiasts. The problem is, if only a few gamers are allowed to experience the new features and performance of the GeForce 7 series, the passion of most others wishing to own a GeForce 7 card would quickly fade. With that considered, a cheaper, but still high performance model was expected to appear shortly after the debut of the GeForce 7800 GTX. As we all know, that card has arrived, and it is dubbed the GeForce 7800 GT.

GeForce 7800 GT Overview

Though the GeForce 7800 GT is not the top model in the GeForce 7 series, its specifications still come in at well above any GeForce 6 series card. There are in total <u>20 pixel pipelines and 7 vertex units</u> in the GeForce 7800 GT, while top GeForce 6 series model, the GeForce 6800 Ultra has only 16 pixel pipelines and 6 vertex units.

A direct comparison between the GeForce 7800 GTX and GeForce 7800 GT reveals changes not only to the internal architecture, but reductions to the core and Video RAM speeds as well. The GeForce 7800 GTX features 4 more pixel pipelines and 1 more vertex unit. In addition, the GTX's 425MHz core clock/1.2GHz memory data rate are faster than the *GeForce 7800 GT's <u>400MHz core clock/ 1.0GHz memory </u>data rate* as well.

What's important here is that while the GeForce 7800 GT is certainly a step lower in performance terms, the official MSRP $449 makes it a friendlier proposition in comparison to the GeForce 7800 GTX. Don't forget either that the similarly priced GeForce 6800 Ultra is less powerful than the GeForce 7800 GT.

As a member of GeForce 7 family, the GeForce 7800 GT features the same technologies as the GeForce 7800 GTX, including <u>Shader Model 3.0</u>, <u>High-dynamic range</u> (HDR) lighting, and <u>NVIDIA Scalable Link Interface</u> (SLI) multi-GPU technology, which have been immortalized as

NVIDIA "Power of 3". And what the "Power of 3" brings to play is improved performance and graphics quality.

Unfortunately AGP users will not have the good fortune of tasting the power of the 7800 GT as NVIDIA has no plans to release an AGP version of product. As such, the PCI Express version is the only choice.

Introduction to the EVGA e-GeForce 7800 GT (N518)
EVGA's e-GeForce 7800 GT looks nearly identical to the NVIDIA GeForce 7800 GT reference card, with the obvious exceptions being the decal and EVGA logo on the cooler. The large single-slot cooler is a good cooling and space-saving solution. At the top of the card, we see the SLI gold finger which will allow you to hook two GeForce 7800 GT cards into an SLI array for a more than noticeable performance bump in most of the 3D games, especially at very aggressive resolution and image quality settings.

There is a black molex power connector on the right end of the card. To allow the card to run at its full potential, please don't forget to connect it firmly to the power supply unit via the 6-pin PCI-E power connector.

On the bracket, we find dual DVI-I and S-Video ports, as well as an S-Video port supporting HDTV output and VIVO.

EVGA has released several versions of the card, all of which are of course based on the

GeForce 7800 GT. The card introduced here corresponds to product model number 256-P2-N518. This card is factory overclocked to a <u>core clock of 445MHz</u> and <u>memory data rate of 1070MHz</u>, which is quite a lot higher than the stock card's 400MHz and 1000MHz respective frequencies. These clock speeds help push the card's performance to a level slightly better than NVIDIA's reference GeForce 7800 GT card.

This card is equipped with <u>256MB Video RAM</u> – standard configuration for today's high-end video card.

There are sufficient accessories bundled with the card, including <u>2 DVI-I to VGA adapters</u> used to connect analog monitors to the DVI-I ports. If your power supply unit doesn't provide a 6-pin PCI-E power connector, you can use the <u>dual 4-pin to single 6-pin power cable</u> to provide the card with additional power. For video application, the *<u>S-Video cable</u>* and *<u>HDTV modular block connector</u>* expand the function of the single S-Video port. Moreover, a <u>quick installation guide</u> and <u>driver CD</u> are included as you would expect with any video card.

Good news! Customers who purchase the card get *<u>a free EVGA 133-K8-NF41 Socket 939 NVIDIA nForce4 SLI ATX AMD Motherboard as a combo special on Newegg.com</u>*. That's a really attractive proposition, especially to system builders.
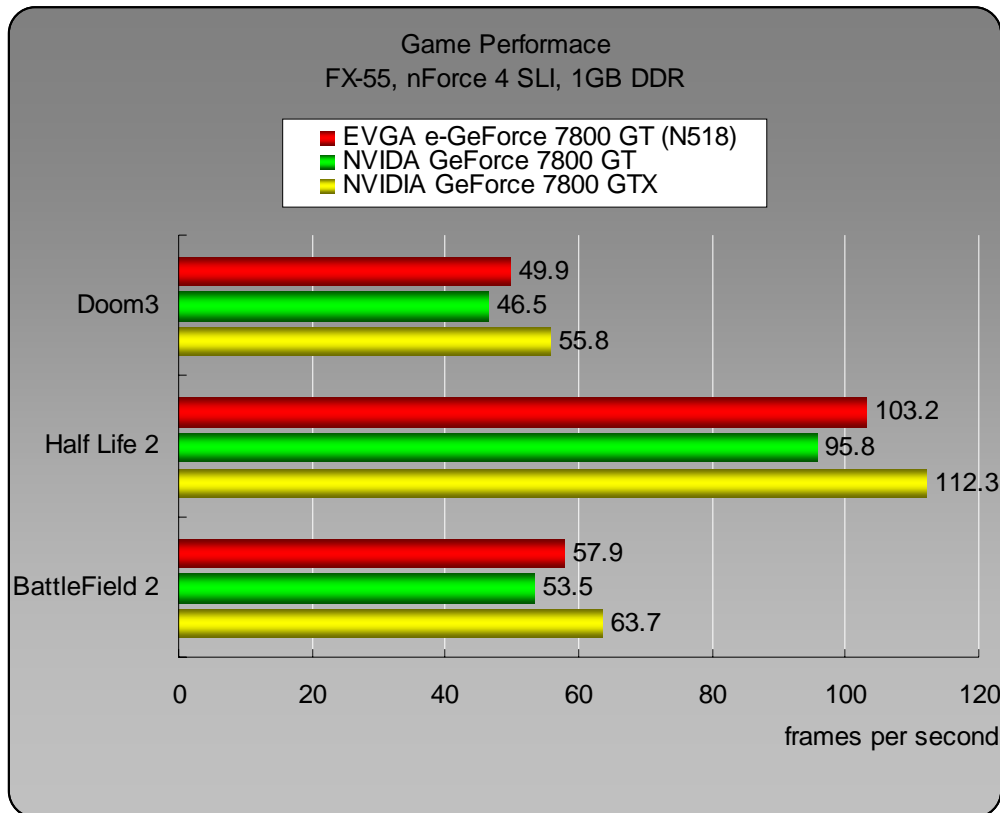
The performance

Test Platform Setup	
CPU	AMD Athlon FX-55 (2.6GHz)
Motherboard	ASUS A8N-SLI Deluxe
Memory	Kingston HyperX DDR500 512MB x2
HDD	Maxtor DiamondMax plus 9 120GB
OS	Windows XP Professional + SP2
Display Driver	NVIDIA Forceware 81.87
Game Setup	
BattleField 2	Custom Demo 1600x1200, High Quality,4xAA
Half Life 2	Custom Demo 1600x1200, 4xAA,8xAF

Doom3	Demo1
	1600x1200, High Quality, 4xAA

Game Performace
FX-55, nForce 4 SLI, 1GB DDR

■ EVGA e-GeForce 7800 GT (N518)
■ NVIDA GeForce 7800 GT
■ NVIDIA GeForce 7800 GTX

Doom3
49.9
46.5
55.8

Half Life 2
103.2
95.8
112.3

BattleField 2
57.9
53.5
63.7

frames per second

The results are average frame rate figures
● Below 20 fps - very poor gaming performance
● 20~30fps - skipping will be apparent, but the game is still playable
● 30~40fps - basically smooth gaming, occasional skipping may still occur
● 40~60fps - smooth sailing all the way
● 60fps and - very smooth, gameplay is very good
Note: If you experience skipping at a certain resolution and image quality setting, reducing these settings may be helpful towards a smoother gaming experience

According to the test results, the _EVGA e-GeForce 7800 GT (model number 256-P2-N515) enjoys approximately a 7~8% performance advantage over NVIDIA's reference GeForce 7800 GT card_. In actual 3D game testing with three of today's hottest games, we found the user will be able to enjoy smooth gameplay using high image quality settings at the resolution of 1600x1200. This kind of rendering power puts the card in a good position of readiness for yet more demanding games in the future.

What do I get with the EVGA e-GeForce 7800 GT?
The EVGA e-GeForce 7800 GT has enough power to run today's 3D games at high resolution and excellent image quality settings. The card is born for the game enthusiasts who are grounded by price considerations. Its factory overclocked settings ensure that you are truly receiving a card that is quite special.

In addition to the satisfying gaming performance, the card has strong video capabilities. VIVO is an excellent function provided for video capture and editing, while HDTV support is a feature that will gain in significance as the HDTV standard increases in popularity.

Finally, if you don't mind the $150 premium between the GeForce 7800 GT and the flagship GeForce 7800 GTX, then the GeForce 7800 GTX or a more powerful future product may be more suitable choices. One of those choices could very well be the exciting new RADEON X1000 flagship from ATI.