GPU REVOLUTIONIZED GRAPHICS

Battlefield 1942 (2002)
- Pixel Shading
- Light Baking

Gears of War (2006)
- SSAO

Crysis (2007)
- Depth of Field
- Dynamic Shadows

Battlefield 3 (2011)
- Tessellation
- Physics

Battlefield V (2018)
- Photogrammetry
NEW INVENTIONS FOR NEXT-GEN

- Reflections: Ray Tracing
- Global Illumination: Ray Tracing
- Facial Animation: Ray Tracing + Deep Learning
- Area Lights: Ray Tracing
- Character Animation: Deep Learning
- Super Resolution: Deep Learning

Character Animation by University of Edinburgh, Adobe Research. Facial Animation by Sohrab Esfehani.
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NVIDIA RTX
NEXT-GEN GRAPHICS

Game Engines
OptiX | DXR | Vulkan
Rasterization | Compute | NEW Ray Tracing | NEW AI
GREATEST GPU LEAP

PASCAL
11.8 Billion xtors | 471 mm² | 11 Gbps G5X

TURING
18.6 Billion xtors | 754 mm² | 14 Gbps G6

Peak Throughput

<table>
<thead>
<tr>
<th></th>
<th>COMPUTE</th>
<th>SM</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PASCAL</td>
<td>12 TF</td>
<td>12 MB</td>
<td>3 MB</td>
</tr>
<tr>
<td>TURING</td>
<td>16 +16 TF</td>
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Peak Throughput

- PASCAL
  - Compute: 12 TF
  - SM: 16 TF
  - L2: 16 TF
  - RTC: 130 TF
  - TC: 11 GR/s

- TURING
  - Compute: 130 TF
  - SM: 11 GR/s
NEXT-GEN GRAPHICS
NEXT-GEN GRAPHICS
"DirectX ray tracing paves the way for developers to deliver the future of games."
— Kam VedBrat, Partner GPM, DirectX

"GeForce RTX has made real-time ray tracing a reality in UE4."
— Tim Sweeney, CEO, Epic Games

"Real-time ray tracing moves real-time graphics significantly closer to realism, opening the gates to global rendering effects never before possible."
— Natalya Tatarchuk, VP Graphics, Unity Technologies

"Battlefield V was a just a glimpse into the visually immersive capabilities of real-time ray tracing made possible by the combination of EA’s Frostbite game engine and GeForce RTX technology, with more to come as we work together in 2019."
— Tim Leland, VP / GM, Frostbite
RTX ON “THE WAY IT’S MEANT TO BE PLAYED”
RTX ON “THE WAY IT’S MEANT TO BE PLAYED”
RTX ON “THE WAY IT’S MEANT TO BE PLAYED”
ANNOUNCING GEFORCE RTX 2060
RTX ON “THE WAY IT’S MEANT TO BE PLAYED”

Core i9-7900X, 16 GB, Dev build, High Preset with RT medium.
RTX ON “THE WAY IT’S MEANT TO BE PLAYED”
RTX ON “THE WAY IT’S MEANT TO BE PLAYED”
NEW TURING ARCHITECTURE BOOSTS MODERN GAMES

Wolfenstein II
Middle-earth: Shadow of War
Star Wars Battlefront II
Call of Duty Black Ops 4
Sniper Elite 4
Deus Ex: Mankind Divided
Doom 4
Hitman (2016)

Core i9-7900X, 16 GB, 1440p, High settings.
GAMERS POWERING UP

Source: Steam HW/SW survey. Monitors: IHS.

GPU Perf Needed for 60FPS @ 1080P

3X GPU Required

2X Resolution

1080P 60Hz

1440P 144Hz

2013 (Kepler)
2015 (Maxwell)
2017 (Pascal)

2.5X Growth in x60+ Gamers
GEFORCE RTX 2060 – NEXT-GEN GAMING FOR 10’S OF MILLIONS OF GAMERS
GEFORCE RTX 2060

52T TENSOR FLOPs
5 GIGARAYS / SEC
6GB G6

$349
SPECIAL GAME BUNDLE

RTX 2060/70
Get Anthem or Battlefield V

RTX 2080/Ti
Get Anthem and Battlefield V
GEFORCE RTX 2060 IS HERE!

January 15th
ANNOUNCING
GEFORCE RTX 2060
SYSTEMS WORLDWIDE
NVIDIA G-SYNC ULTIMATE
Pinnacle of gaming monitor technology

**GENERATION 3 G-SYNC PROCESSOR**
- High-precision HDR
- Lowest-latency HDR
- Ultra-low motion blur
- 3D LUT color correction

**BACKLIGHT CONTROL**

**PANEL**
- 4K 144Hz IPS
- Variable overdrive
- Δms response time
- DCI-P3 color gamut

**CERTIFICATION**
- State-of-the-art display testing lab
- Factory color calibration
- 300 image quality tests
- Integrated GPU, driver, game, panel testing
- No tearing, stutter, minimum lag
- No flickering, blanking, ghosting, and more
ANNOUNCING G-SYNC ULTIMATE

Asus ROG Swift PG27UQ
HP OMEN X Emperium 65
Acer Predator X27
A-Sync Monitors are for Gaming

550+ Monitors | 6M Units Shipped

Blanking

Pulsing

Silky Smooth & Beautiful
ANNOUNCING G-SYNC COMPATIBLE MONITORS
NVIDIA TESTED AND DRIVER OPTIMIZED
400 TESTED | 12 PASSED
DRIVER COMING JANUARY 15th

Acer XFA240  Acer XG270HU  Acer XV273K
Acer XZ321Q  Agon AG241QG4  AOC G2590FX
Asus MG278Q  Asus XG248   Asus VG258Q
Asus XG258  Asus VG278Q  BenQ XL2740
200M Gamers

1.5M 3D Animators

8M Game Broadcasters

200M Gamers

8M Video Enthusiasts

4M PC VR Headsets
8M Game Broadcasters

ANNOUNCING AUTODESK ARNOLD INTERACTIVE RENDERING

8M Video Enthusiasts

RTX ON

4M PC VR Headsets
ANNOUNCING AUTODESK ARNOLD INTERACTIVE RENDERING

ANNOUNCING 8K RED VIDEO EDITING

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ANNOUNCING OBS PRO-QUALITY BROADCASTING ON SINGLE PC

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ANNOUNCING TURING VRWORKS WITH HTC VIVE
MAX-Q TECHNOLOGY
ANNOUNCING
GEFORCE RTX
LAPTOPS –
RECORD 40+ MODELS

All Major OEMs Worldwide
17 Max-Q Models
Available January 29th
MAX-Q DRIVING GROWTH

Source: NVIDIA. Thin Gaming Laptop = <25mm and x60+ GPU.
MAX-Q DRIVING GROWTH

**GEFORCE® GTX WITH MAX-Q DESIGN**

**THEN**
- 51 MM
- 18 LBS
- 1X PERF
- GTX 880M

**NOW**
- 18 MM
- 5 LBS
- 2X PERF
- GTX 1080

Source: NVIDIA. Thin Gaming Laptop = <25mm and x60+ GPU.
THE GAMER’S LAPTOP
GEFORCE RTX 2080

15% Lighter
10% Smaller
2.5X Battery Life — 8 Hours
144 Hz, Thin Bezel

Compared against the thinnest GTX 1080 laptop, the Asus GX501.
THE GAMER’S LAPTOP
GEFORCE RTX  2080

Faster Than GTX 1080 Desktop
2X PS4 Pro; 30% Volume
60+ FPS Battlefield V RTX On
6K RED Video Editing
Interactive 3D Rendering

Config: i7-8750H, 16GB DDR4. BFV settings: 1080p, Ultra Quality Preset with DXR Ultra and DLSS.

MSI GS65 Stealth
THE GAMER’S LAPTOP
GEFORCE RTX 2060

1.6X PS4 Pro
Faster Than GTX 1070 Desktop
60+ FPS Battlefield V RTX On
4K RED Video Editing
Interactive 3D Rendering

Acer Predator Triton 500

I7-8750H, 16GB DDR4. BFV settings: 1080p, Ultra Quality Preset with DXR Ultra and DLSS.
TAKE AMAZING PHOTOS WITH ANSEL

Free Camera  AI Super Resolution  Ray Tracing  Filters  360/VR  Raw EXR
GEFORCE RTX
IT’S ON.

GeForce RTX 2060 is here
Available January 15th
$349

Record 40 new RTX laptops
World's fastest & thinnest
Available January 29th