TECHNOLOGY
STAGE

pcim

mesago

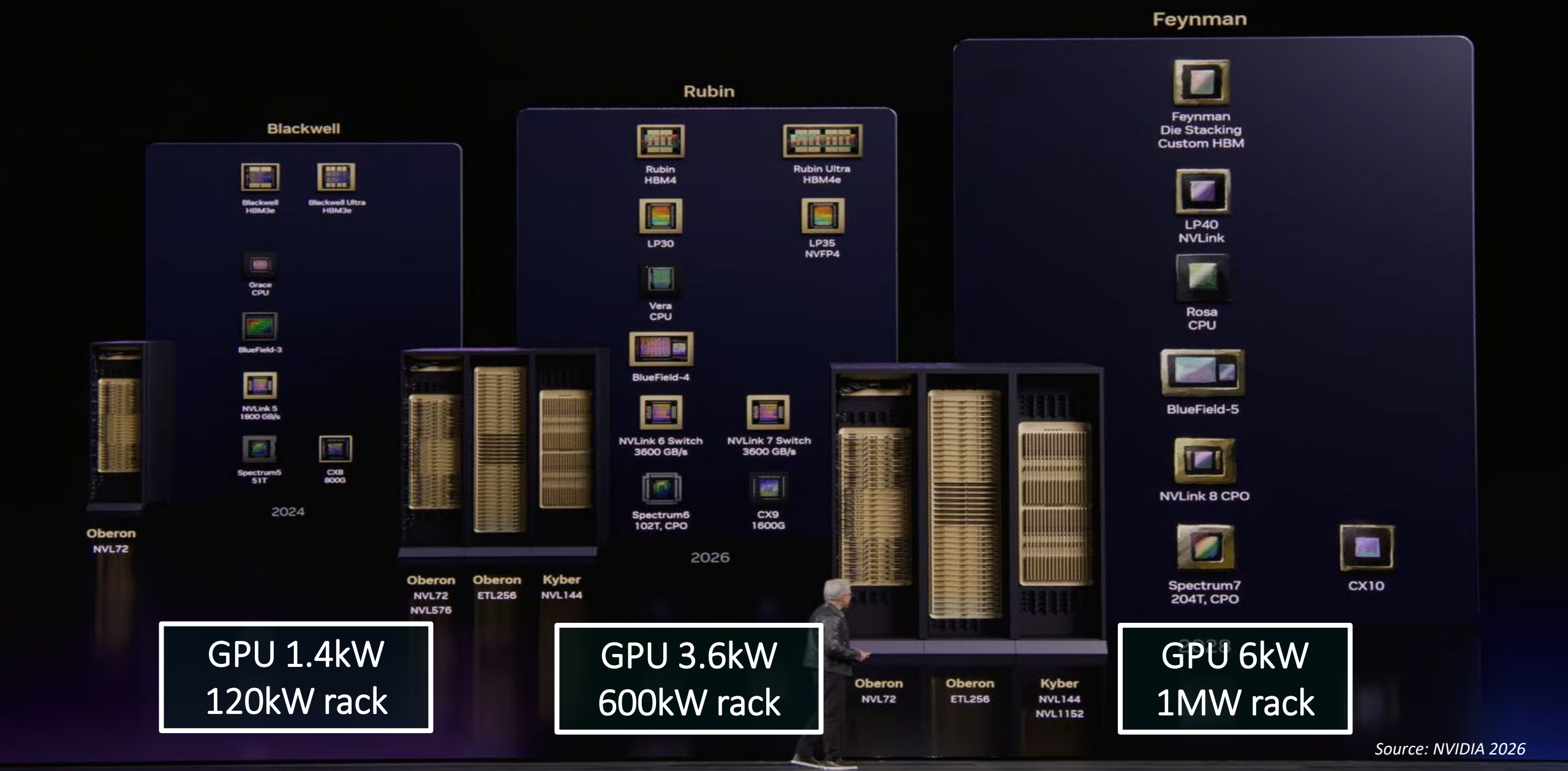
9 – 11.6.2026
NUREMBERG, GERMANY

“What’s up, what’s next for GaN?”

Llew Vaughan-Edmunds
VP & GM – GaN
Navitas Semiconductor

Messe Frankfurt Group

The GPU Power Explosion is Redefining Rack Power



GPU 1.4kW
120kW rack

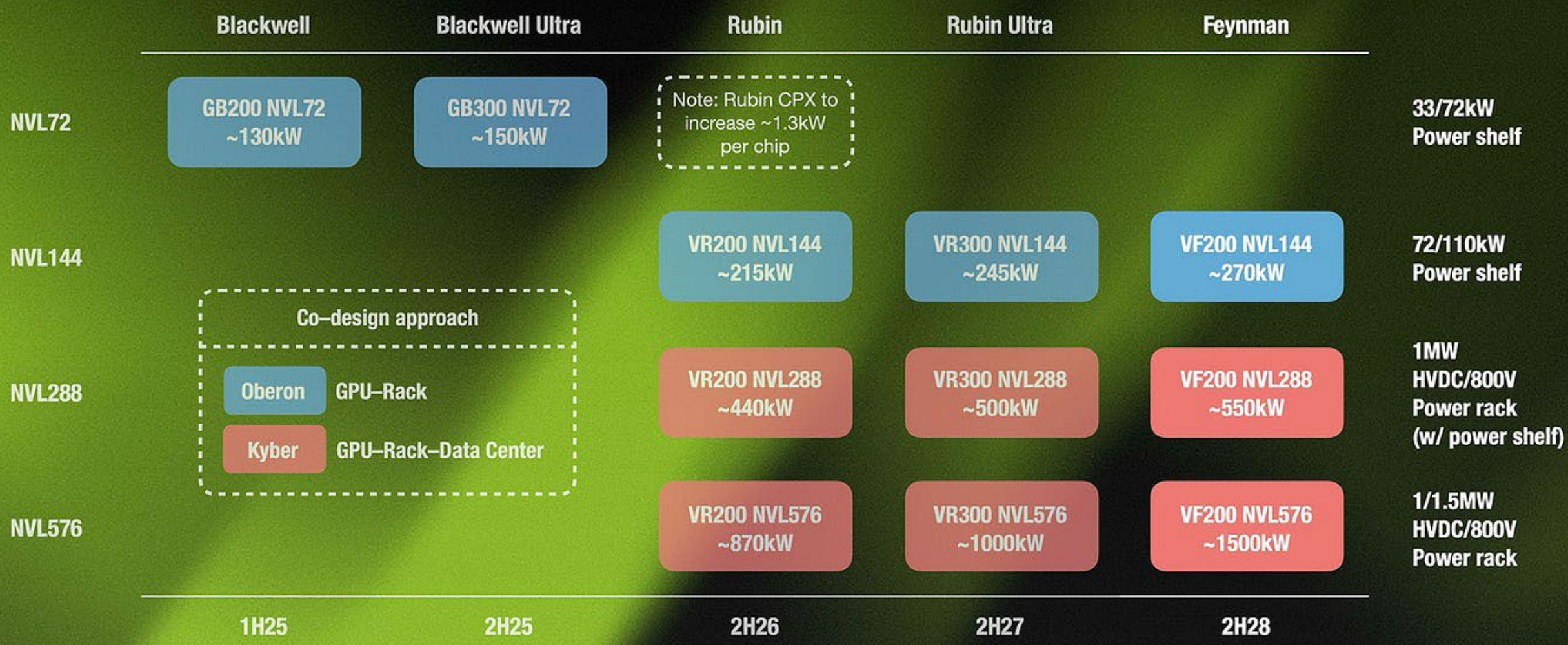
GPU 3.6kW
600kW rack

GPU 6kW
1MW rack

Source: NVIDIA 2026

Nvidia AI Server Power Architecture Design Trends

Source: Ming-Chi Kuo (郭明錤), X (https://x.com/mingchikuo), Oct 29, 2025.

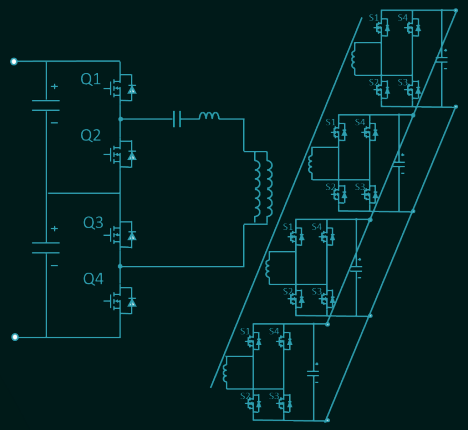


Source: NVIDIA

800V In-Tray Power Delivery Drives Efficiency & Density

- 10kW DC-DC Brick (800V -50V)
- 98.5% peak efficiency
- 1.9 kW/in³ power density

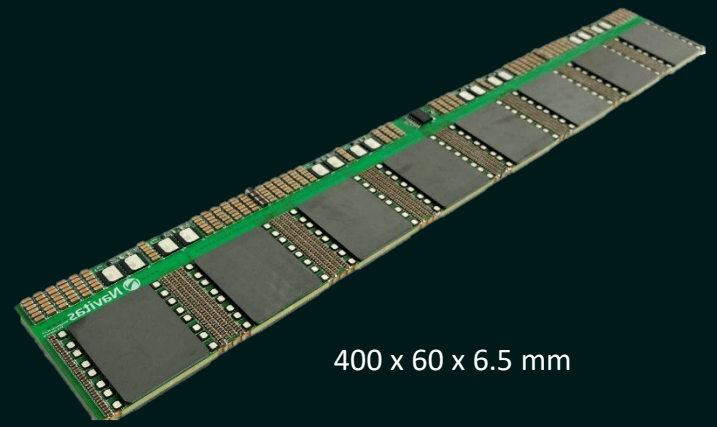
116 x 61 x 12 mm



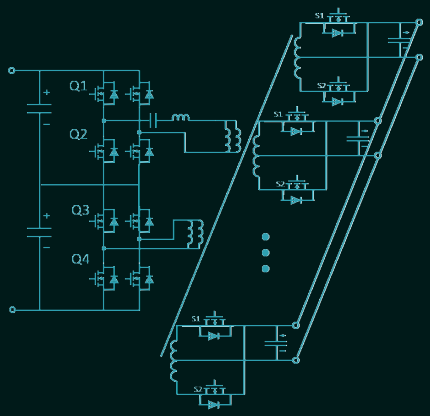
4 x 650V GaN FET
TOLT

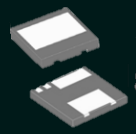
16 x 100V GaN FET
8x8-DC

- 20 kW DC-DC PDB (800V – 6V)
- 97.5% peak efficiency
- 2.1 kW/in³ power density
- Displayed by NVIDIA at GTC 2026



400 x 60 x 6.5 mm





16 x 650V
8x8-DC

Laptop/Mobile Workstation Power Evolution

Office & Business Productivity

- 13-15” screen
- CPU: ~15W – 30W
- GPU: ~5W –15W
- Screen, Fan, SSD, Wifi –~5-12W
- Topology: PFC + **QR Flyback** + SR (Easy)

GaN content: $1-2

High-End Creator / Mid-Range Gaming

- 16-18” screen
- CPU: ~30W – 60W+
- GPU: ~40W – 115W+
- Screen, Fan, SSD, Wifi –~10-25W
- Topology: PFC + **AHB** + SR (Medium)

GaN content: $2-3

Professional Creator / High-End Gaming / AI Development

- 16-18” screen
- CPU: ~45W – 80W+
- GPU: ~120W – 175W+
- Screen, Fan, SSD, Wifi –~10-25W
- Topology: PFC + **LLC** + SR (Difficult)

GaN content: $5-6

Computers are demanding more power

70W

Dell Pro 14

140W

Apple 16" M4 Macbook Pro

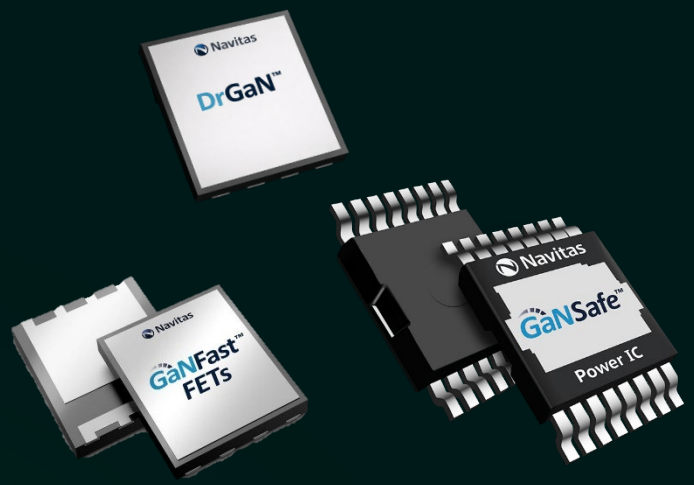
280W

Dell Pro Max 16 Plus

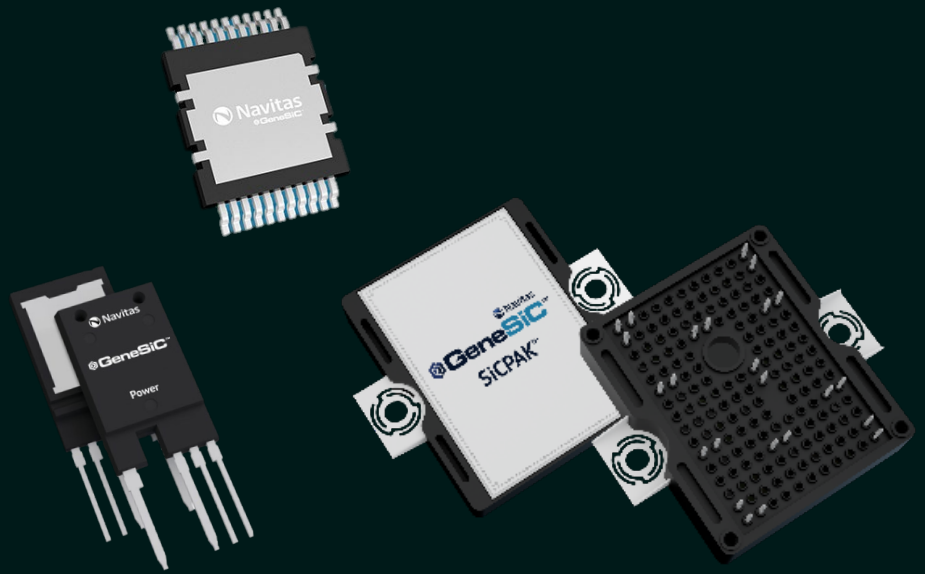
Dell Pro Max GB10

NVIDIA Blackwell Architecture •
200B+ Parameters • AI Supercomputer

Navitas is Powering the Future of Data Centers!



100V – 650V



650V – 3,300V

Let's go GaNFast™

GeneSiC™ Strong!

Summary

- AI-driven data center demand is rapidly accelerating global power consumption
- Data center energy use is approaching country-scale levels and will continue to grow
- Rack-level power is growing above 1MW to support higher compute loads
- Energy efficiency and power infrastructure innovation are essential to enable sustainable AI scaling
- Navitas’ GaN & SiC are enabling the next wave of scalable AI growth.