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BREAKING THE LIMITS

Unlocking AI Clusters Performance in Data Centers

ECOC EXHIBITION INDUSTRY AWARDS 2024

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AI Clusters Energy Demand

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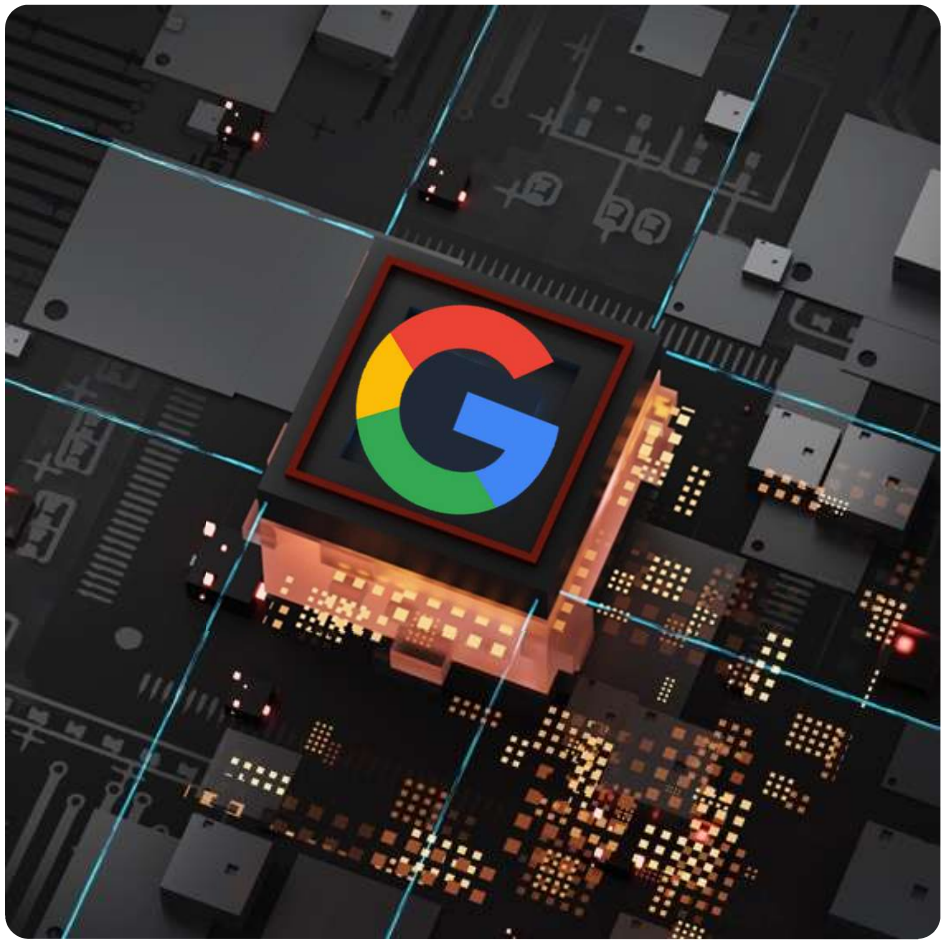
A single Google search can power a 100w lightbulb for 11 seconds.

A single ChatGPT session consumes upwards of 50-100 times more power than a single Google search.

VentureBeat



NVIDIA NVL72 Case Study – AI Cluster Performance Optimization

System Spec

- 72 GPUS
- 120Kw total system power
- 1.36 metric ton (3,000 lb)
- Water cooled (2Liters/Sec)

⚠ The total system power density is at its practical limit.

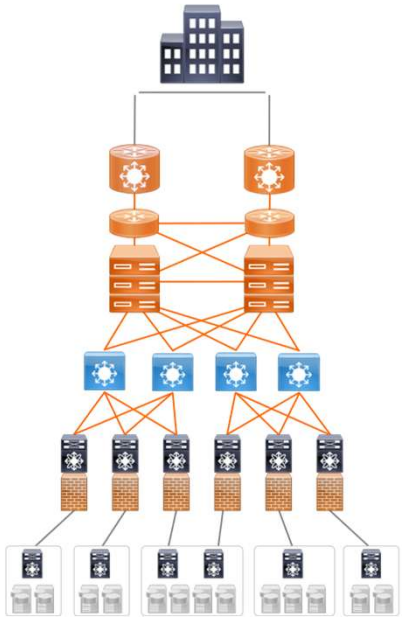
Network Spec

- More than 3 Km (2 miles) of copper cabling
- 2 X Nvidia's NVLink 7.2T ASICs → 144 x 100G links
- 9 x NVLink switches per rack → 1.8 TBps
  (18 links of bidirectional bandwidth to each of the 72 GPUs in the rack)

⚠ The existing AI Clusters solution is not optimized due to the projected increase in total system power consumption and inefficiency in GPU utilization to process the huge amount of Data needed for LLM training

Pluggable Transceivers – Target Market Segmentation

Typical Data Center Architecture



	Interconnect (Inside the DC)				DC-to-DC	
Application						
Modulation	Non- Coherent – PAM4 (2x)				Coherent - 16QAM (4x)	
	SR	DR	FR	LR	ER	ZR+
Distance	100m	500m	2km	10km	40km	~100km
Market share %		60%		10%	30%	

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Chip set Target Market
500m – to - 40Km
400G/800G/1600Gbps

Breakthrough - 224G per lane, PAM4 DSP-Free for 28Km already demonstrated with Intel

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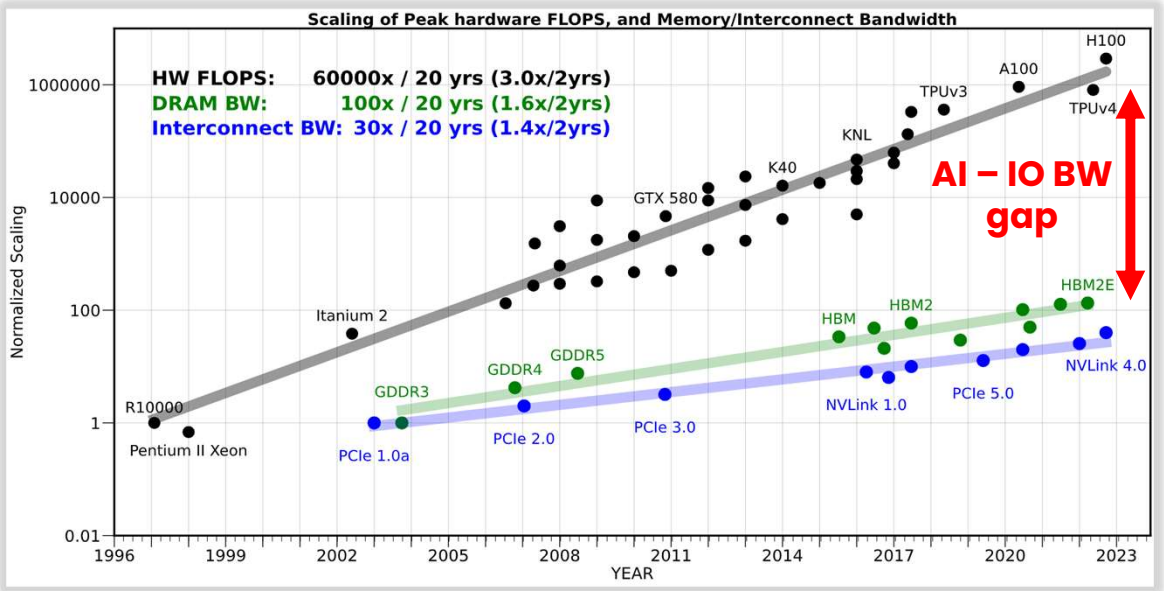
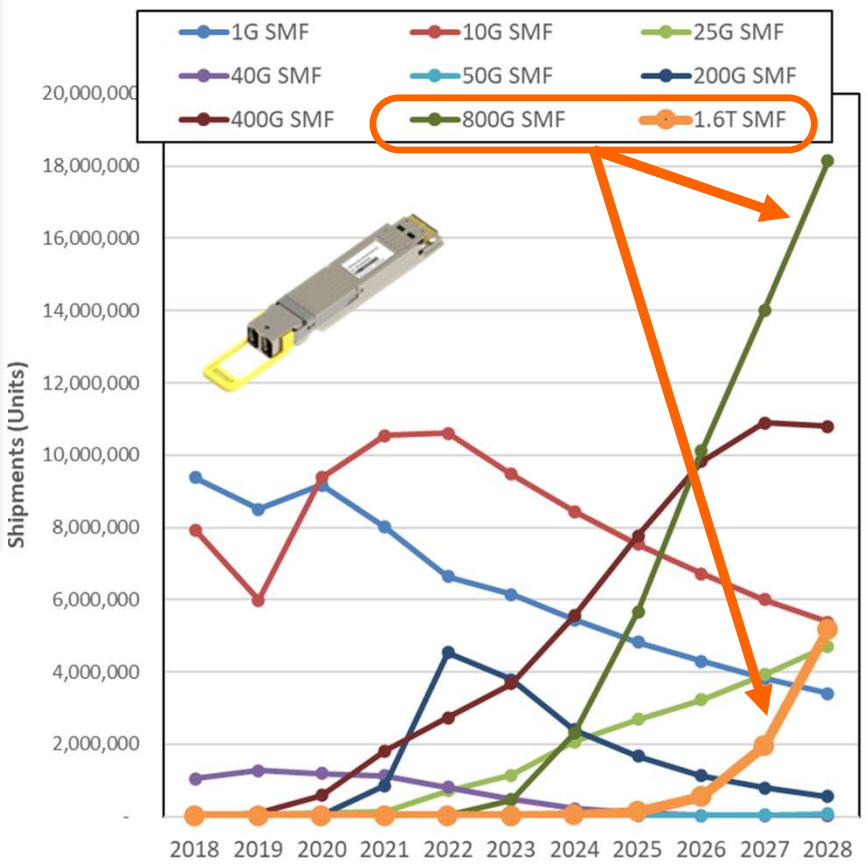
Immediate Target Market – Pluggable Ethernet Optics



https://medium.com/riselab/ai-and-memory-wall-2cb4265cb0b8

- Next 3-5 years will see explosive growth in demand for 800Gbps and 1.6Tbps, fueled by the rising needs of AI and computing clusters.
- NewPhotonics solutions are poised to capitalize on this growth, with potential revenues of hundreds of $M



Source: LightCounting Sep2023

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Introducing the **Award Winning**

NPG102+OSP Chip Family

'OSP' - Optical Signal Processing

Design wins with leading OEM Manufactures, ramping up mass volume production in 2025-26!

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Shortlist Nominee:
Most Innovative Photonic Component

50th Anniversary
ECOC2024
FRANKFURT
EXHIBITION 23-25 SEPTEMBER

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Most Innovative Product:
Most Innovative Photonic Component

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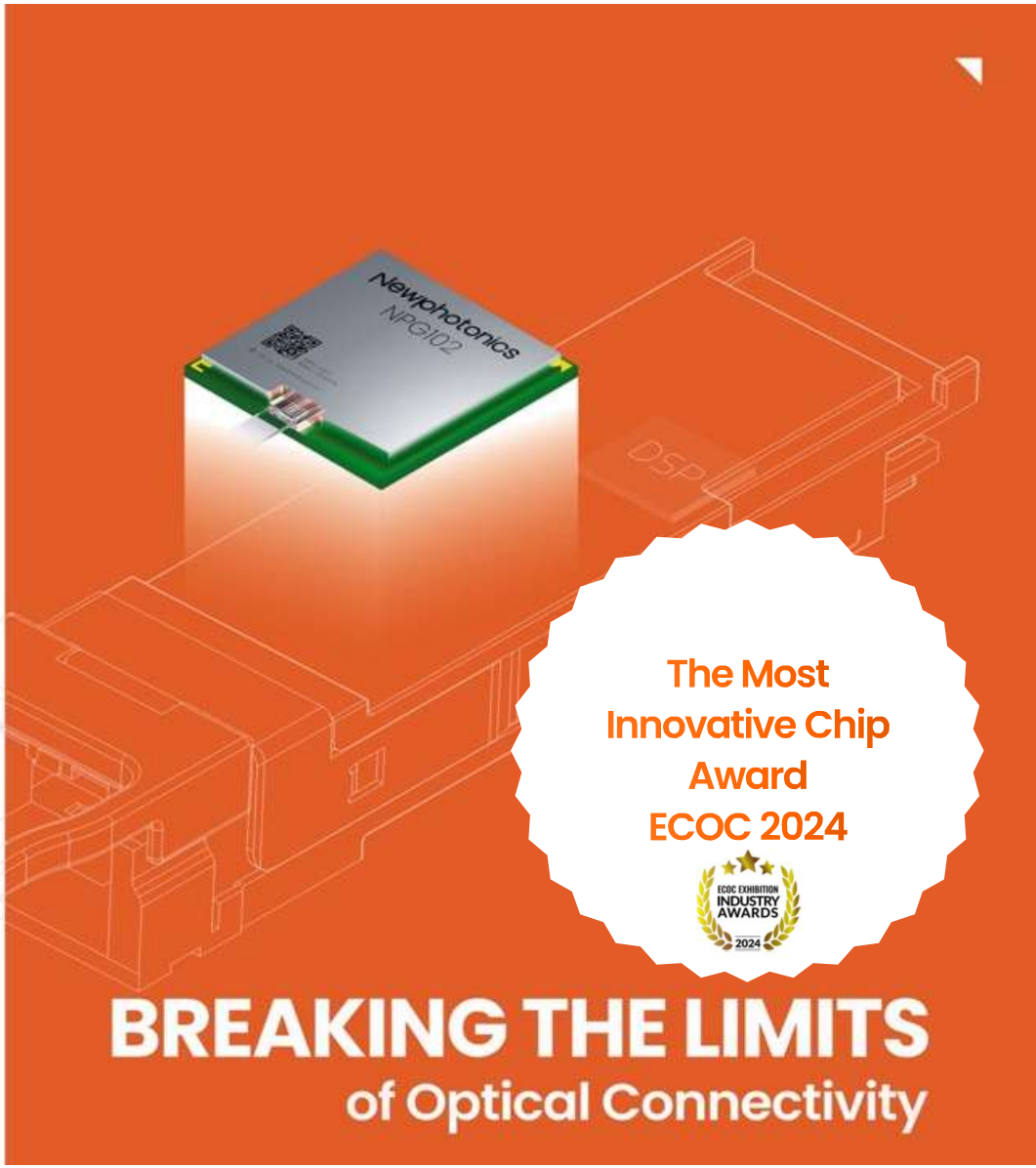

Patented Technology Advantage – For Transceiver Market

Unlocking Photonics from design to mass volume production

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Optical Signal Processing-OSP

All-optics signal processing for signal equalizers , dispersion and noise reduction

NiOX™

SiP All-optics Non-invasive Monitoring, Control and Calibration

Integrated Laser

Photonic integrated laser and patented multifunction laser with time-pulsed optical clocking

Maximum energy efficiency breakthrough lasers

Significant Power and Cost Reduction in Data Centers

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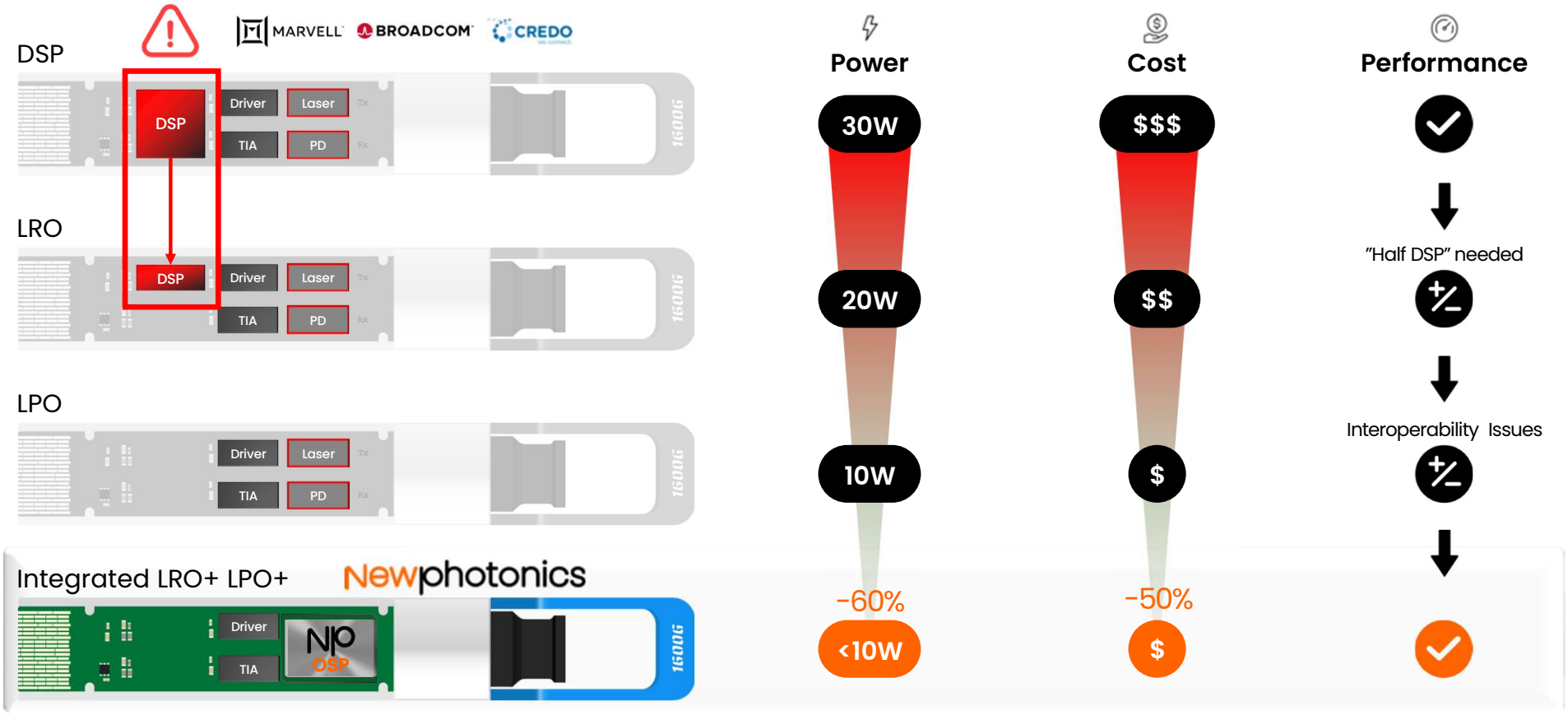

First in Market Integrated Monolithic SiP Chip w Lasers & OSP

Management Team

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Yaniv Ben-Haim
CEO & Founder

Experienced CEO with 25 years experience in leading R&D teams and international business development

Prof. Yosef Ben-Ezra
CTO & Founder

+25 years of academic and hands-on experience in optical communication, silicon photonics, and AI

PhD. Yossi Zilberfarb
EVP Corporate Development & Founder

+30 years of engineering and international BD experience in wireless/SAT comm. and silicon architecture

Doron Tal
SVP & GM Optical Connectivity

+25 years leading engineering and international business leadership from concept to mass market adoption of fiber, copper and wireless silicon-based systems

Amir Dorner
VP of Operations

+25 years Global Operations leadership initiating supply chain, revenue growth and cost reduction programs

Alon Sella
VP Products

+25 managing multidisciplinary products throughout its lifecycle in global tech companies

Oren Horvits
VP of R&D

+25 years leading RD and production teams with hands on experience in R&D of optical transceivers and switches

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THANK YOU

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Shortlist Nominee:
Most Innovative Photonic Component

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