From grids to bits

Data centre interconnects - where possibilities connect

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Inference inflection point

Agentic AI driving the needs for AI giga-factories

Inference inflection point:
Inference, i.e. productive, compute outpacing training.

Agentic AI

Generative AI

Perceptive AI



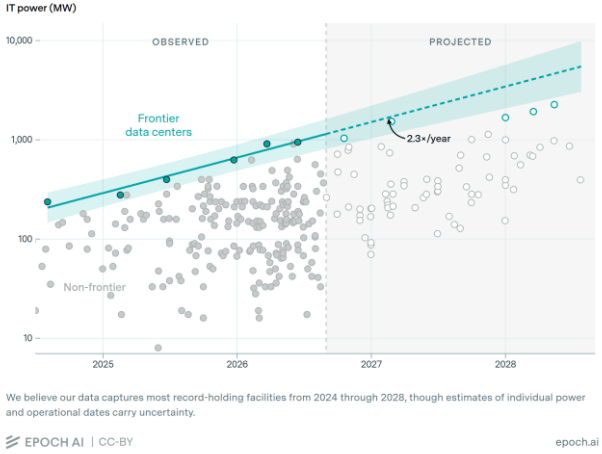
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Just like ordinary factories, AI factories need power

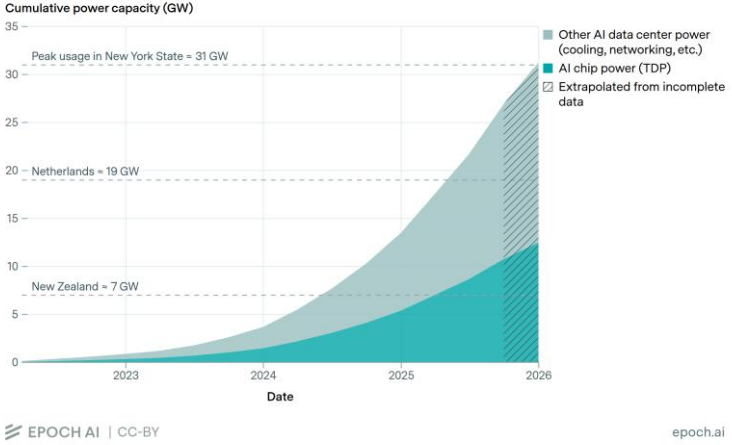
…and Giga-factories need Gigawatts of power

The record for power capacity in a single data center has doubled every 10 months



Axel Campos and Ben Cottier (2026), "The record for power capacity in a single data center has doubled every 10 months". Published online at epoch.ai. Retrieved from 'https://epoch.ai/data-insights/frontier-data-center-power' [online resource]. Accessed 9 Oct 2026.

Global AI power capacity is now comparable to peak power usage of New York State



Yafah Edelman et al. (2026), "Global AI power capacity is now comparable to peak power usage of New York State". Published online at epoch.ai. Retrieved from 'https://epoch.ai/data-insights/ai-datacenter-power' [online resource]. Accessed 9 Oct 2026.

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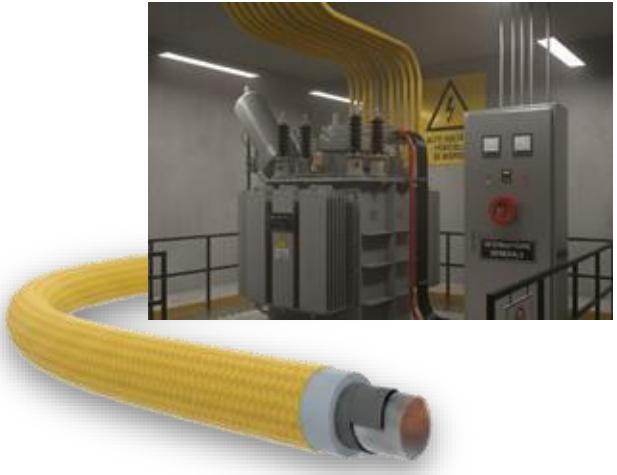
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Interconnects for grid applications

Inverter/Converter - Transformer - Cabinet







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4

Grey space advantages and use cases of silicone cables

By the way… it is silicone not silicon

Silicone: a crosslinked elastomer (rubber), thus without state changes (at peaks even up to 750°F) and great Arrhenius Performance, i.e. durability under temperature exposure.



Heat insensitive

Current rating of cables changes with temperature (de-rating).



- Example: current I = 400A @122°F ambient temperature
- Silicone cable without derating requires cross section of 95mm^2
- Legacy cable gets derated with k_1=0.82, resulting in effective current of I' = 488A and cross section of 120mm^2

Insensitive to geometry

Current rating of cables changes with geometry and bunching (de-rating).



- Example: current I = 2500A in a phase bundle (four wires)
- Silicone without derating at I_w = 2.5kA / 4 = 625A, corresponding to 4x185mm^2
- Legacy cable gets derated with k1=1.1, resulting in effective current of I' = 4x825A and cross section of 4x240mm^2

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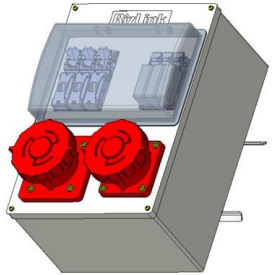
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Power to the rack

Tap boxes and power whips routing power off the busway

Tap boxes attaching to busway







New product
Booth B29

Power whips

- Power requirements are increasing
- Need more whips to provide power
- Whips getting bigger with increasing power
- Back of the rack already getting crowded





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Silicone power whips

Providing a solution to increasing power requirements for AI compute





- Power and currents increasing
- Thicker whips and/or more whips
- Already crowded
- Need flexibility to allow tighter cable routing
- This can be size or materials
- Standard cables more prone to temperature issues for smaller diameters

Silicone power whips

- Flexibility – about 50% lower bending force required
- Better temperature performance





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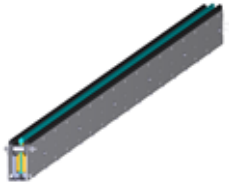
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Distribution in the rack

Busbars, connectors, and in the shelf

Rack busbars – distribution in the rack

44OU OCP ORV3 48Vdc
- up to 1.4kA
- designs up to 3kA



Liquid cooling starting at 3.2kA
- bottom to top flow
- bottom to bottom flow

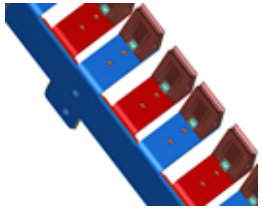


… and within the power shelf

DC Power Connectors



Power shelf busbars
up to 110kW



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HVDC – pushing to 800V

Power rack and compute rack solutions



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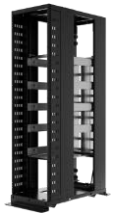
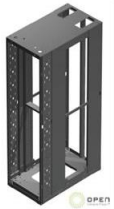
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Racks, enclosures, and keeping things cool

Strategically adding technologies through Interplex

Interplex
A BizLink Company

Data centre racks




Server cooling solutions

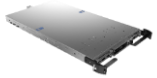




Enclosures / chassis







CMA & Accessories







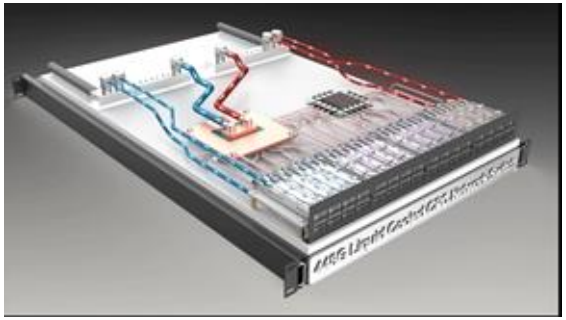

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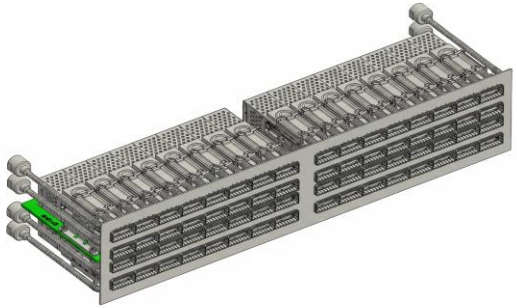
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Liquid cooled OSFP cage

BizLink's answer to increased power demands for pluggables

Demo at booth B29





- Optimized single-pipe routing
- Flexible High-Density Configuration
- Balanced Thermal Performance

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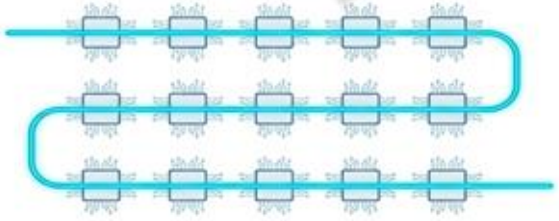
Leak detection system

For peace of mind in liquid cooled system

BizLink's daisy-chain design

- Less cables
- Supports better airflow
- Faster troubleshooting
- Easier scalability

Demo at booth B29





Traditional star topology

- Many, bulky cables
- More difficult airflow
- Diffictult troubleshooting



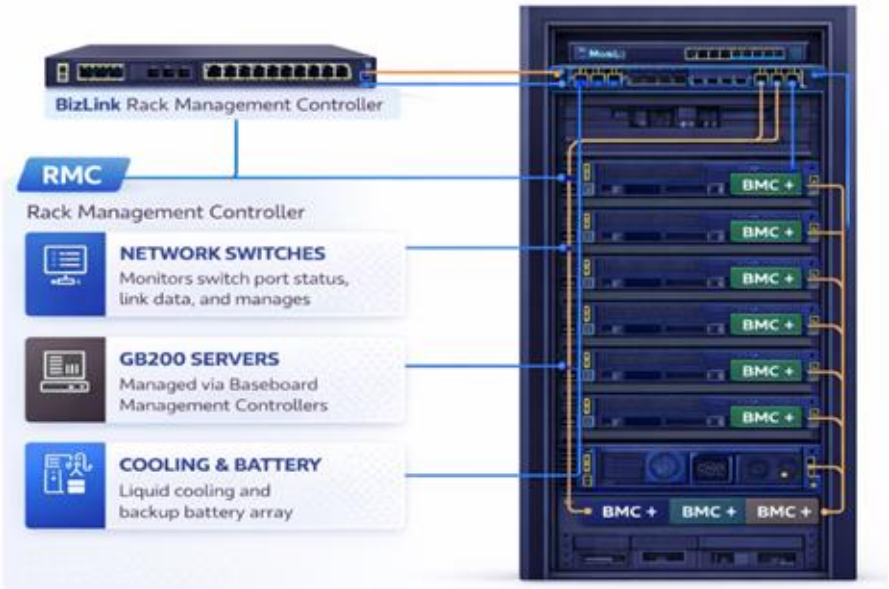
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BizLink Rack Management Controller

Demo at booth B29

Seamless integration made easy



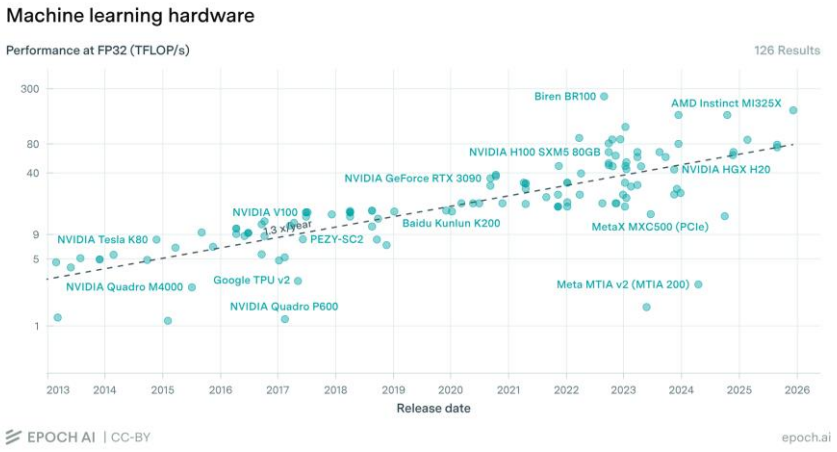
- Telemetry Standardization
- Mechanical Completeness
- Automated Mitigation
- Detection Coverage

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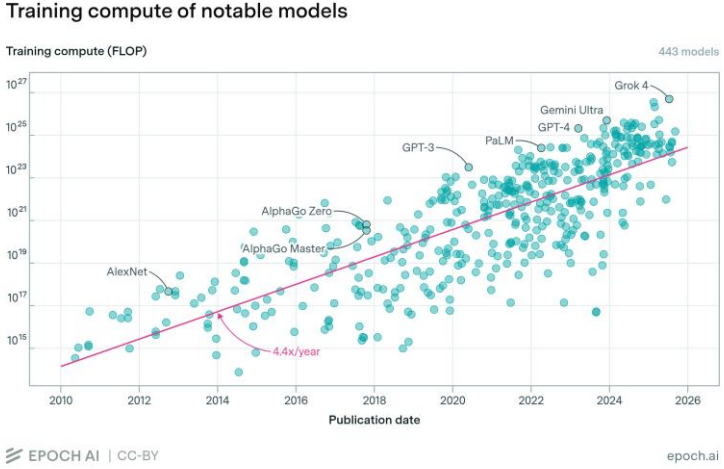
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Compute power has been growing exponentially

One constant across all applications – need for higher data rates



Epoch AI, 'Data on machine learning hardware'. Published online at epoch.ai. Retrieved from 'https://epoch.ai/data/machine-learning-hardware' [online resource]. Accessed 10 Oct 2026.



Robi Rahman and David Owen (2024), "The training compute of notable AI models has been doubling roughly every six months". Published online at epoch.ai. Retrieved from 'https://epoch.ai/data-insights/compute-trend-post-2010' [online resource]. Accessed 10 Oct 2026.

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High-speed data transmission requirements

Inference inflection point bringing additional challenges

Traditional / Before AI

2:1 to 4:1

CPU-Dominant

CPU CPU CPU CPU GPU

- Traditional networking
- High core count

Generative AI Training

1:4 to 1:8

GPU-heavy compute

CPU GPU GPU GPU GPU

- Scale-Up
- Massive parallel computing

Agentic AI / Inference

1:2 to 1:1

CPU Resurgence Phase

CPU CPU GPU GPU GPU

- Scale Out and Across
- Memory bandwidth



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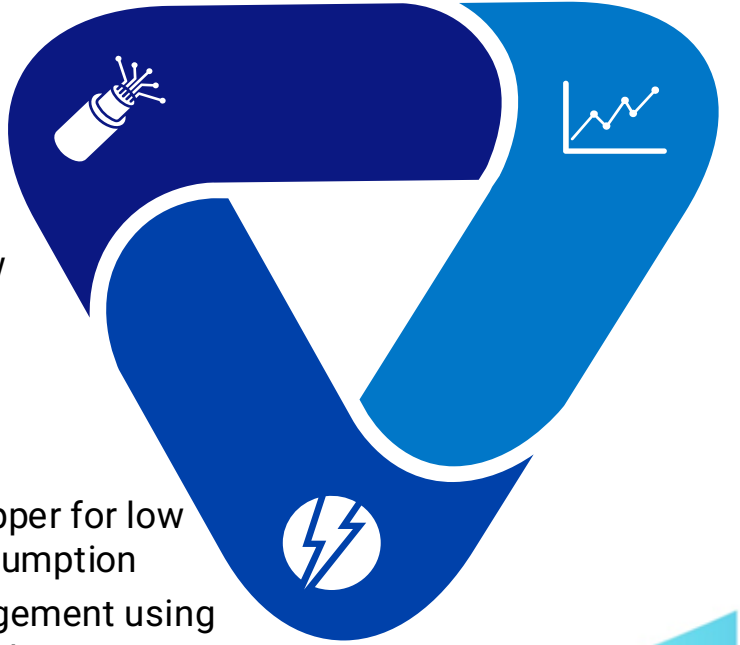
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Copper connectivity facing growing challenges

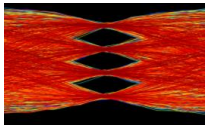
„There will always be a place for copper“ (?)

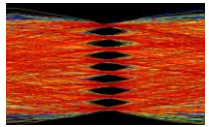
- Cable weight and size
- Things getting crowded
- Need higher density
- Need tighter bends
- Avoid impeding on airflow





- Keeping PAM 4 coding will push Nyquist frequency past 100 GHz
- Denser coding tightens SNR requirements





- Passive copper for low power consumption
- Heat management using liquid cooled connectors

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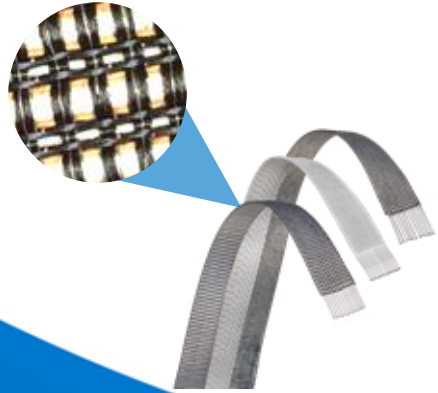
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New solutions for pushing the limits with copper

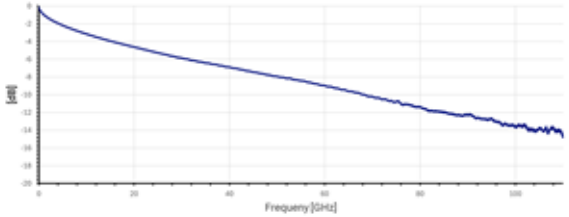
Smaller and more flexible cables to keep copper going

Woven flat cable

- Patented design for reduced diameter and increased flexibility
- Improving airflow and assembly

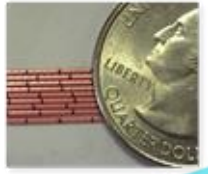


Ultra-slim CPC system



- Ultra-slim AWG 39
- Suck-out free to 110GHz – ready for 448G with PAM 4

Demo at booth B29



Double-helix cable

- Better signal wire coupling using patented design
- Enabling very good symmetry
- Low intrinsic torsion and excellent flexibility

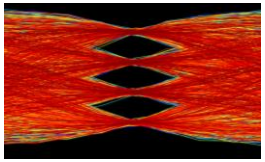


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Fibre growing with many key technologies maturing now

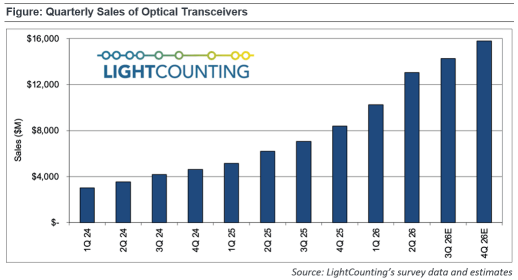
Fibre pushing speed, density, and link lengths



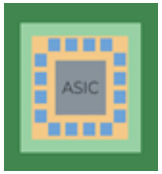
448G links with PAM 4

High density form factors





Road to near-packaged and co-packaged optics





Optical circuit switching

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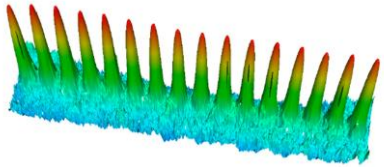
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Optical interconnect solutions

Low loss and high-density patch cords with (multi-)fibre connectors

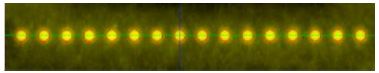
ultra low loss

MMC patch cord



Typical loss
< 0.1dB





Multiple options



- SM, MM, and PM
- SC, LC, FC, ST, and more
- MTP, MPO, MMC, SN, and more
- Break-/Fan-outs

- Typical MPO and MMC IL<0.1dB

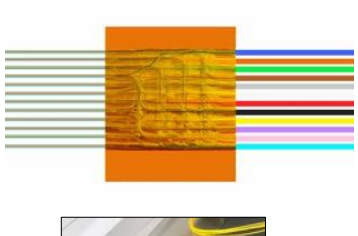
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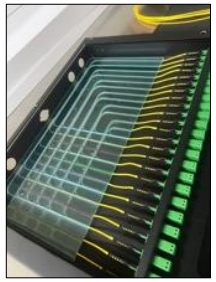
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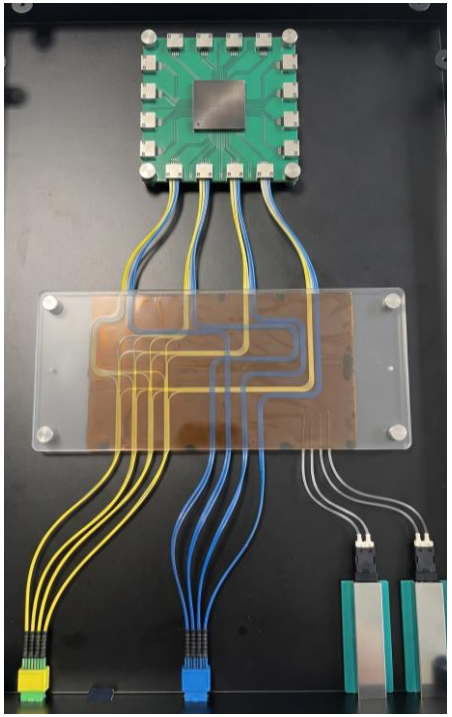
NPO and CPO

Fibre attach units, shuffle boxes, and alignment

Fibre shuffle box







Fibre attach units



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Chief Technology Officer
Computing and Transportation
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