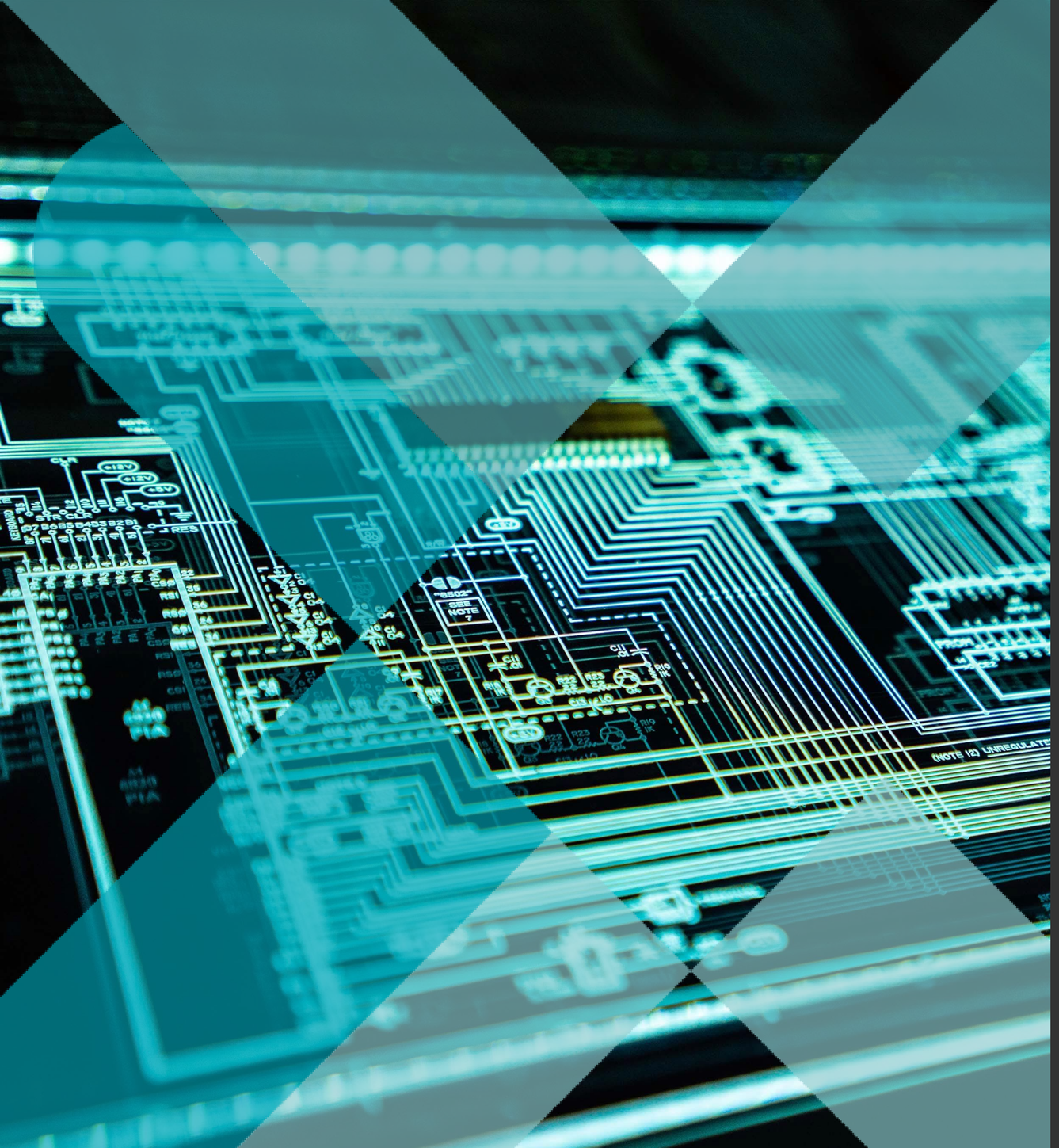

Cloud to Edge Solutions

Business & Technology

Capital Markets Day | May 27th, 2025

Harish Krishnaswamy, Managing Director
Wireless

Source, Sense & Move Data.

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SATCOM Boom Driven By Need for Connectivity Everywhere

Consumer

SATCOM On the Move

Telecomm Backhaul

Aviation

Maritime

Military

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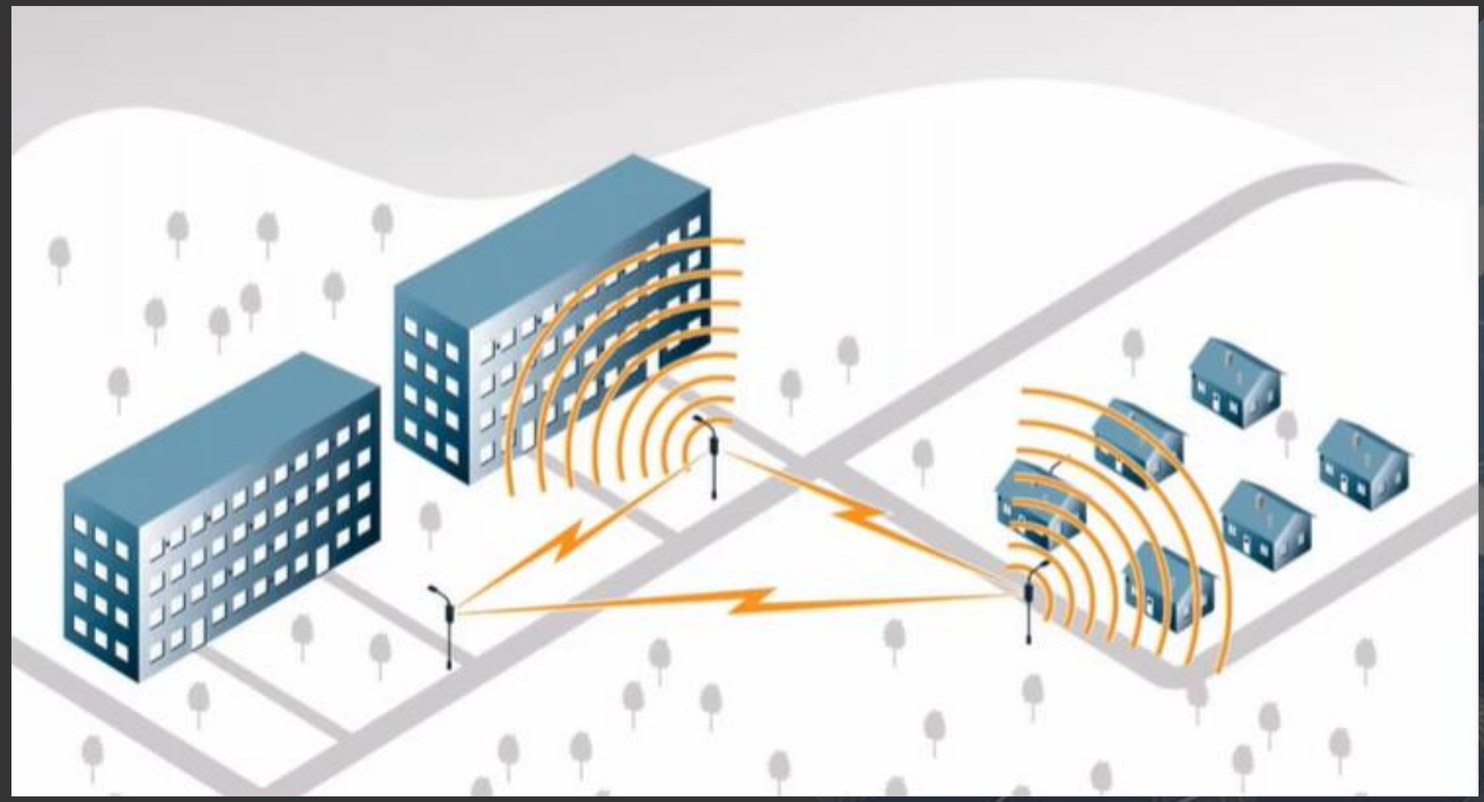
Fixed Wireless Access Is the “Killer” App 5G for mmWave



Driven by green-field markets (e.g. India) where incumbent infrastructure is lacking.

Wireless Target Markets: A $1B SAM by 2030

SATCOM

- ✓Diverse market with many global and regional players.
- ✓Current offerings are in Ka- and Ku- band, but can expand into C and X.
- ✓Key design wins include ALL.SPACE, Thorium, leading European SATCOM network provider.

~$391M

5G mmWave

- ✓ Fixed Wireless Access has emerged as the key 5G mmWave driver.
- ✓ Sivers' standard products cover all 5G FR2 bands and configurations.
- ✓ Key design wins include tier-1 telco infra. provider and leading Japanese infra manufacturer.

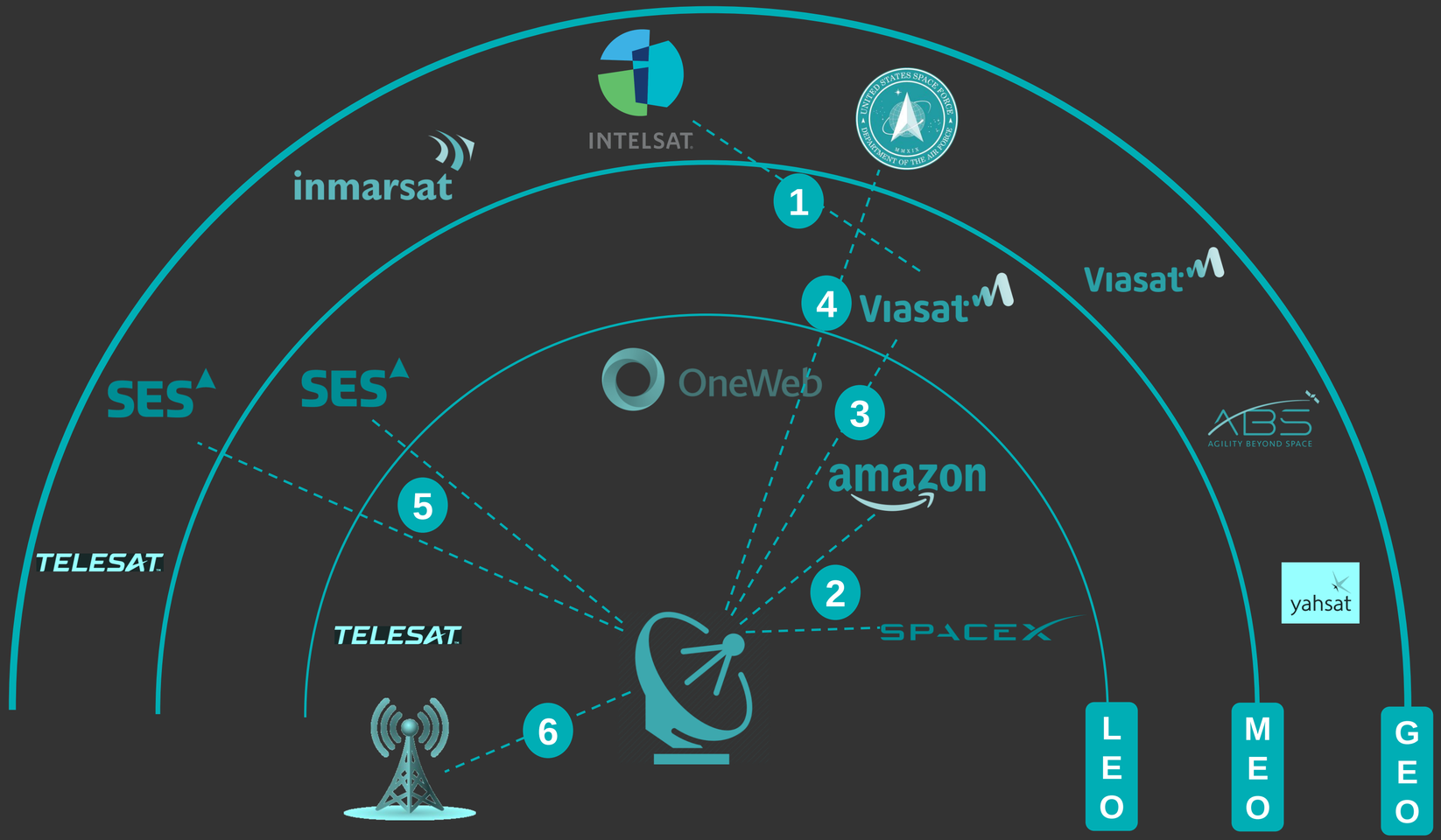
~ $261M

Defense/FR3

- ✓Radar/EW defense applications can use Sivers' existing BFICs, or variants at other frequencies.
- ✓5G FR3 will combine the best of FR1 (coverage) and FR2 (bandwidth).
- ✓Sivers is developing standard products via CHIPS ACT funding.

~$350M

Current SATCOM Networks Face Severe Challenges



1. Satellite operators **do not** communicate with each other
2. Ground terminals **cannot** simultaneously communicate with multiple satellites
3. **No** convergence across orbits (LEO, MEO and GEO)
4. **No** convergence across military and commercial networks
5. **No** convergence across frequencies (Ka, Ku)
6. **No** convergence across satellite and terrestrial networks

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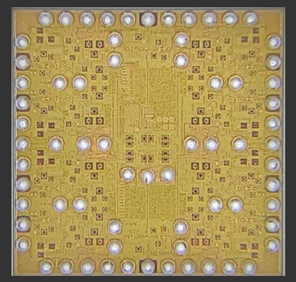
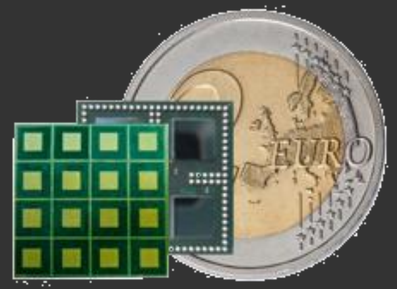
Sivers Features the Broadest mmWave IC Portfolio

Frequency

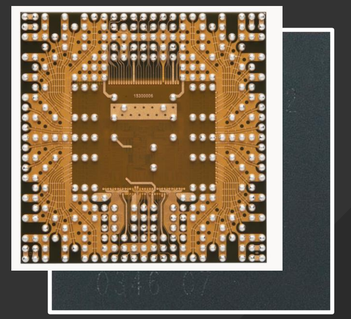
5G (28, 39 & 60GHz)

SATCOM (Ku, Ka Band)

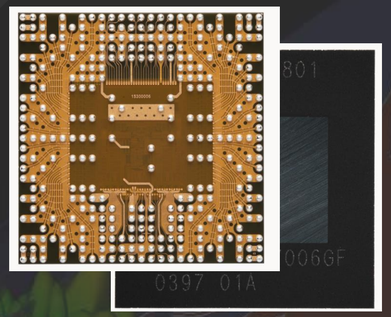




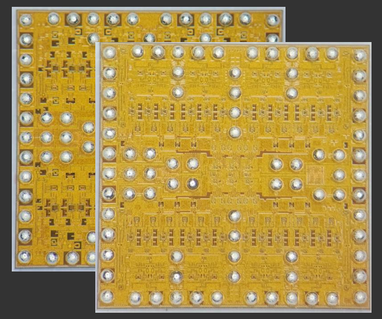
SUMMIT Gen 1



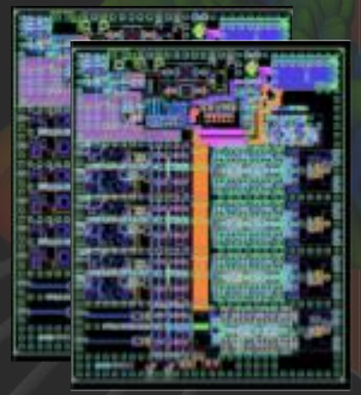
Eder (60GHz)



Rapinoe (28GHz)



Timberline (ALL.SPACE)



Ibra (ALL.SPACE)

Integration

Performance

High-Performance Beamforming ICs

Highly-Integrated RFIC Transceivers

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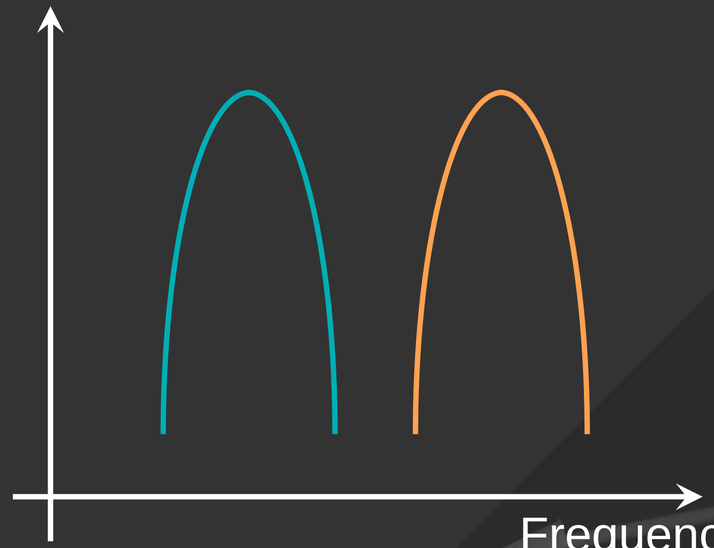
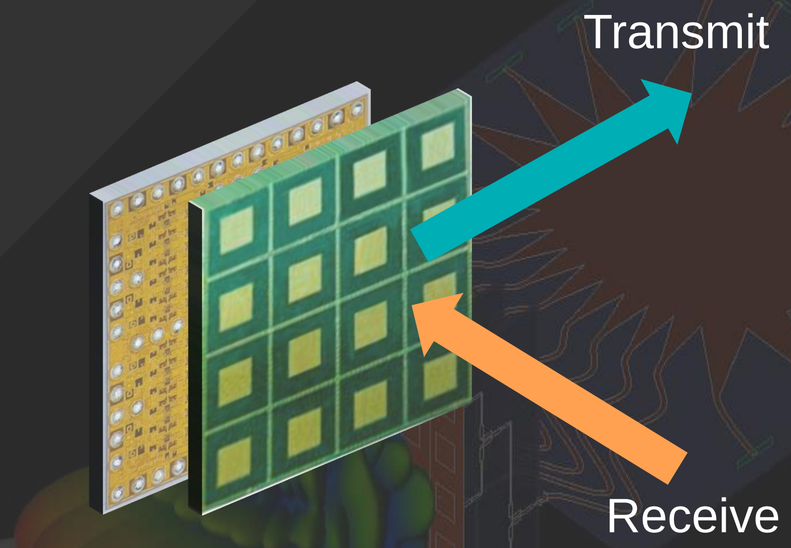
Our Differentiating Features Address SATCOM Challenges

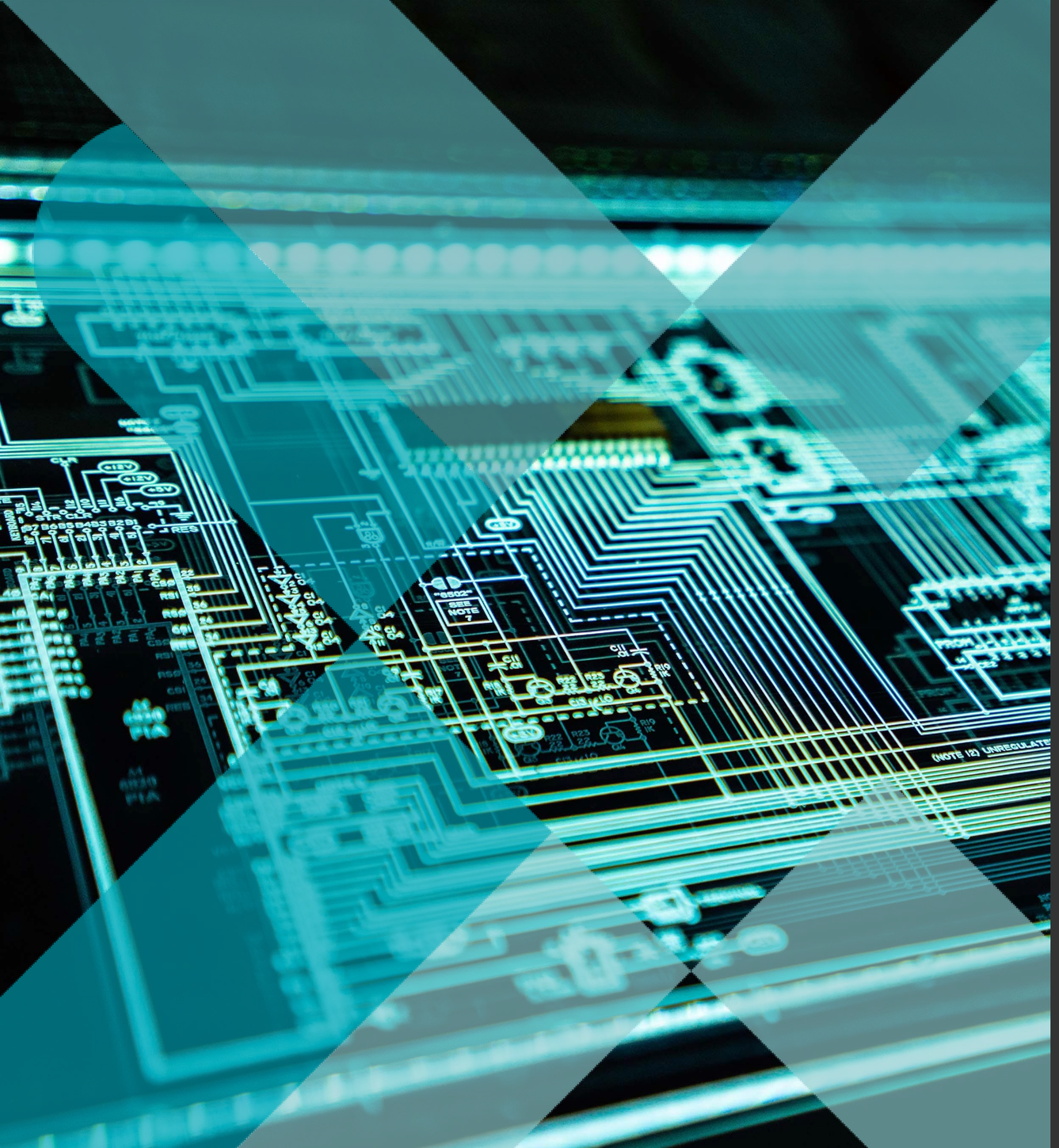
Full-aperture simultaneous **multiple beam** formation enables make-before-break and multi-orbit links



Multi-band (Ku-Ka) beamformer designs enable terminals to communicate across different bands



Sharing the aperture between **transmit and receive** reduces the size and cost.



Cloud to Edge Solutions

Customers, Product Expansion

Capital Markets Day | May 27th, 2025

Harish Krishnaswamy, Managing Director
Wireless

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Wireless Customers Ramping to Volume Production

- Gen 1 Hydra-2 and Hydra-4 in General Availability and deployed with US Army and Navy.
- Total shipments of ~1.3M BFICs to ALL.SPACE by Q3 2025.
- Robust qualified sales pipeline to US DoD customers.

Tier 1 Telco Infra Provider

- Gen 1 product uses Sivers' broad-market 5G BFICs and RFICs, and is expected to ramp to volume in 2026.
- Next-gen product will utilize the custom GF 22FDX beamforming transceiver designed under $5.4M NRE funding.

THORIUM
SPACE TECHNOLOGY

- Engagement includes BFICs for ground segment *and* space payload.
- ES1 ICs are currently in manufacturing, will sample in early Q4.
- Thorium Space has signed numerous strategic partnerships with satellite network operators.

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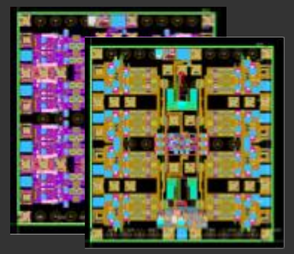
Sivers Product Roadmap

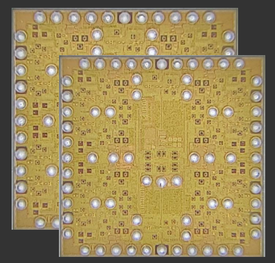
Frequency

5G (28, 39 & 60GHz)

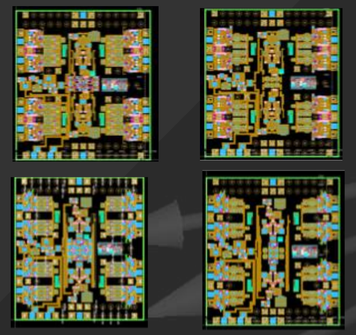
SATCOM (Ku, Ka Band)



Cloudchaser (Ka Standard Product)

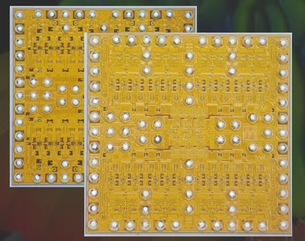


SUMMIT Gen 2 Production

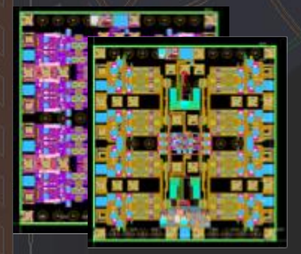


Juniper Production (Thorium Space)

Bifrost (Next-gen 22FDX 5G Transceiver)



KuKa Production (Thorium Space)



Ku Standard Product BFIC

2025 2026 2027 Time

Long-term product development: FR3 transceiver (CHIPS ACT), SI Canceller for EW (CHIPS ACT)

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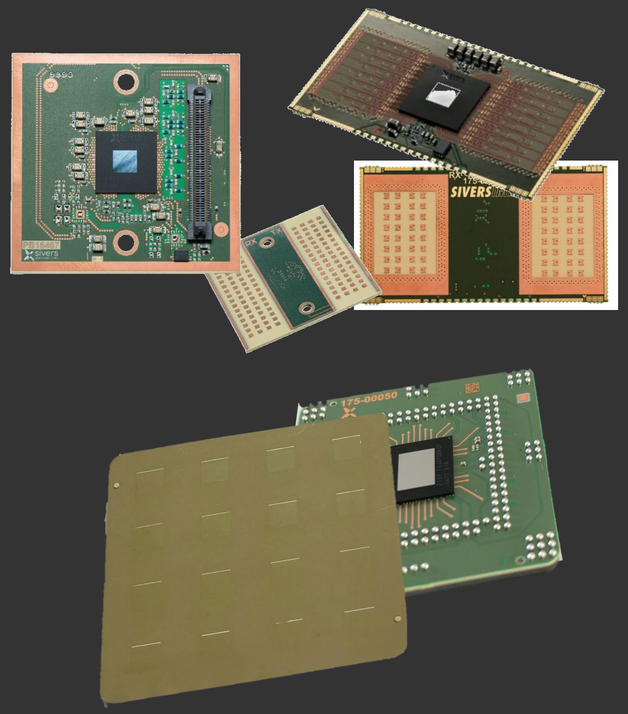
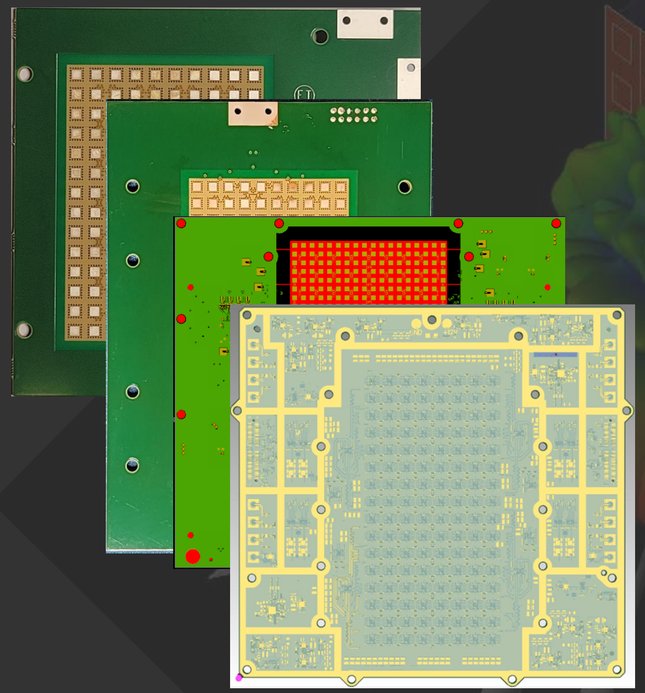
Our Antenna Arrays, Panels Climb Up The Value Chain

Evaluation Kits

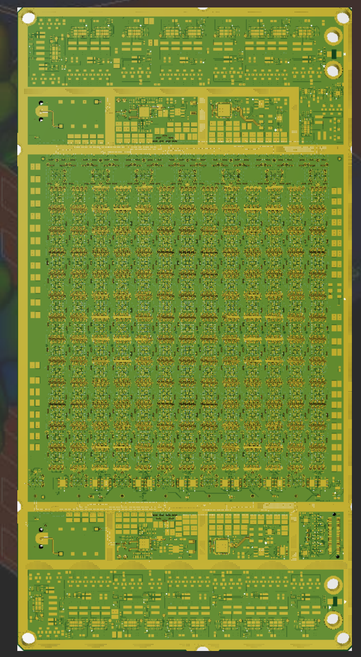
Small 5G/60GHz Array Modules



Large-Scale 5G Array Modules



Large SATCOM Array Panels



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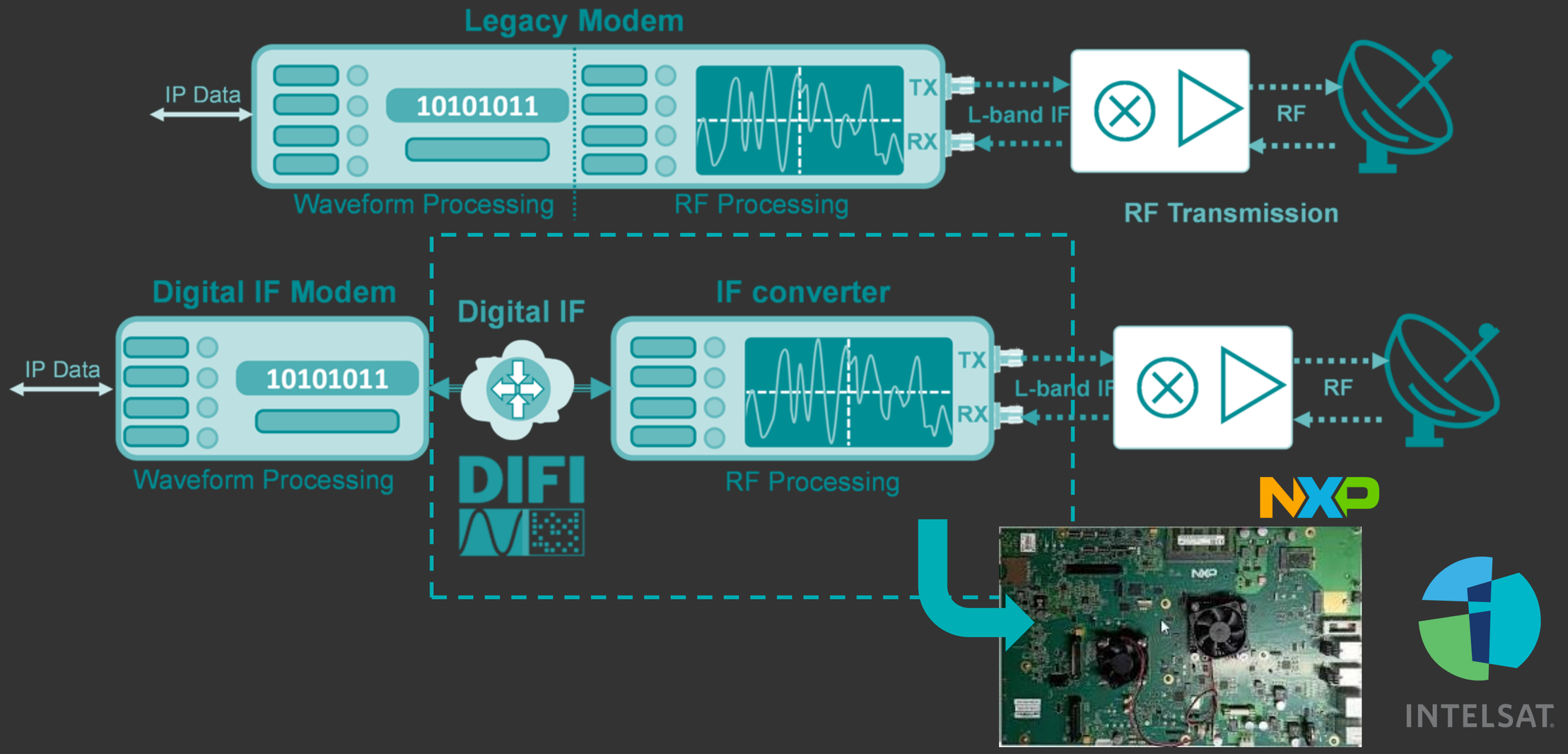
Recent Engagements Mark Our Entry Into Digital Subsystems



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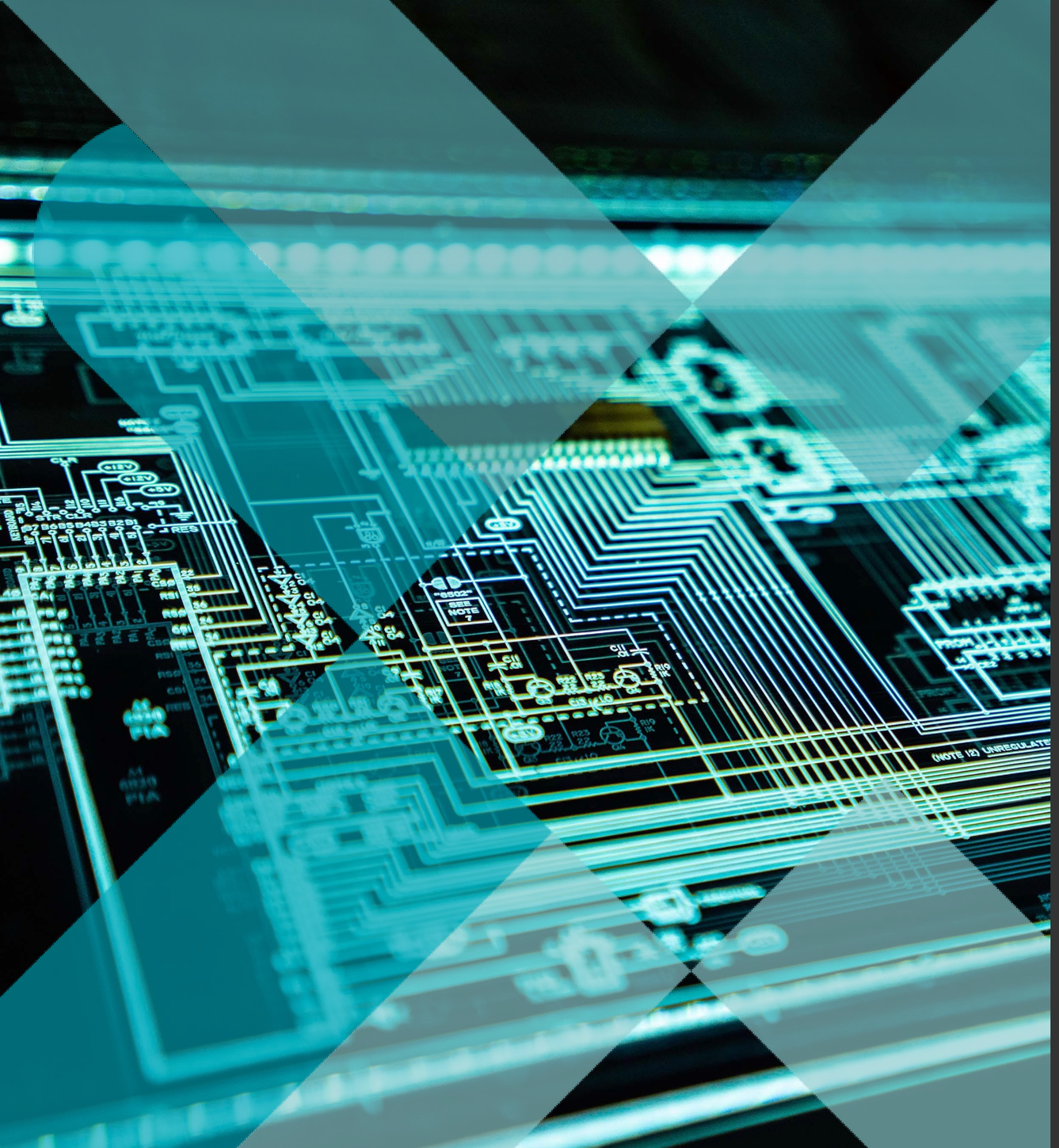

Cloud to Edge Solutions

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Andrew McKee, CTO

Photonics

Source, Sense & Move Data.

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The Fundamental Challenges facing AI Infrastructure Expansion

cfi.co AS WORLD ECONOMIES CONVERGE

The Exponential Growth of AI Computing Power: Trends and Predictions for the Next Five Years

Projected Growth of AI Computing Power

Extrapolating from historical trends, experts anticipate a continued surge in AI computing power over the next five years, driven by:

- **Advancements in AI Hardware:** Specialized AI chips—GPUs, TPUs (Tensor Processing Units), and NPUs (Neural Processing Units)—are accelerating AI workloads. These chips are optimized for parallel processing, high throughput, and low power consumption (Straits Research).
- **Growth of Cloud Computing Infrastructure:** Cloud computing provides scalable, cost-effective access to vast computational resources. The cloud AI market is expected to grow significantly, further boosting the expansion of AI computing power.
- **Emergence of New Technologies:** Quantum computing and photonic chips offer potential breakthroughs that could revolutionize AI processing, tackling complex problems currently beyond classical computers.
- **Increasing Demand for Computing Power:** Scaling deep learning models improves accuracy and performance, driving exponentially growing demand for computing resources (AI Now Institute).
- **Need for Larger AI Clusters:** As demand for AI grows, larger AI clusters emerge, comprising hundreds of thousands of accelerators. This scale introduces challenges in orchestration and hardware stability (Institute for Progress).

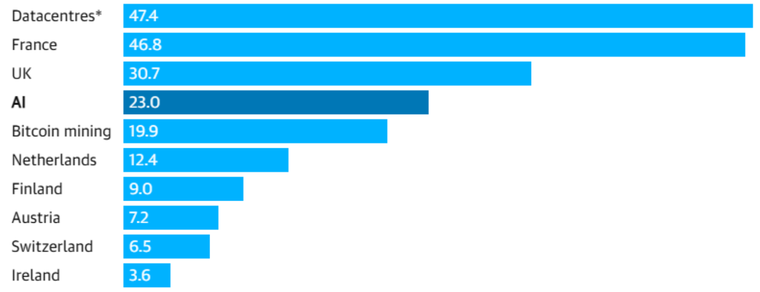
Sam Altman Admits That Saying "Please" and "Thank You" to ChatGPT Is Wasting Millions of Dollars in Computing Power

"You never know."

/ ArtificialIntelligence / Ai / Chatgpt / Sam Altman

AI will be using more power than many countries by the end of 2025, claims new research

Power demand in gigawatts



Guardian graphic. Source: Alex de Vries. Notes: situation at the end of 2024, AI end 2025. 'Datacentres' excludes crypto mining. AI is considered 'all-in' including training power consumption, for instance.

Solving AI's Bottlenecks – The Critical Role of Physical and Software Layers

Going Nuclear: A Guide to SMRs and Nuclear-Powered Data Centers

Small nuclear reactors could one day power data centers with clean energy, but challenges remain.

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Industry Leaders Agree that Optical Interconnect is Critical for the Success of AI

*“Over the past decade, NVIDIA-accelerated computing has delivered a million-X speedup in AI. The next million-X **will require new, advanced technologies like optical I/O** to support the bandwidth, power and scale requirements of future AI and ML workloads and system architectures.”*

Rob Ober
Chief Platform Architect for Data Center Products, NVIDIA

*“**Interconnect bandwidth during scale-out is critical** to preventing the accelerators from stalling while waiting on network transfers for either data or gradients.”*

Christopher Berner
Head of Compute, OpenAI

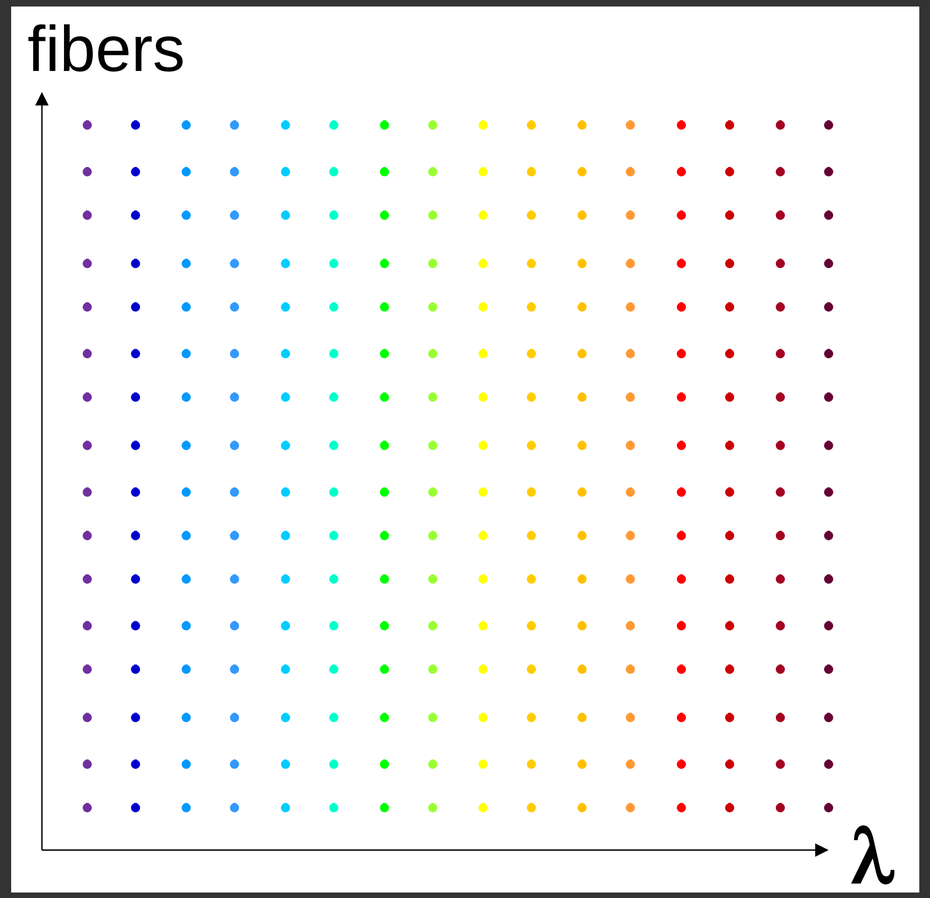
“The biggest companies in the world are hitting an energy power wall and experiencing massive challenges with AI scalability. Traditional chips push the boundaries of what’s possible to cool, and data centers produce increasingly large energy footprints. AI advances will slow significantly unless we deploy a new solution in data centers

Nick Harris
CEO and founder, Lightmatter

The Solution – Replacing Cu Interconnects with Optics

Silicon Photonics Micro Ring Resonators (MRR) Co-packaged with GPUs/ASICs are the clear lead Technology

16 wavelengths on 16 fibers
at 64Gb/s = 16Tb/s



Key Advantages of DWDM Microring Resonators

1. Energy Efficiency. The only solution that gets below 5pJ/bit. Pluggable optics (even LPO) are stuck around 15pJ/bit.
2. High Channel Density through Scalable highly parallel architecture. Multiple signals on each fibre providing route to 16T bandwidth. Pluggables struggling to reach 1.6T
3. Manufactured in High Volume 300mm CMOS fabs such as Global Foundries and tsmc.

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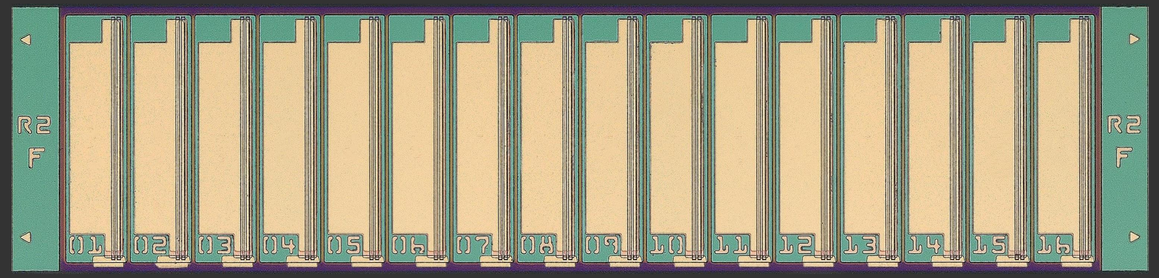
The Sivers Solution - Supplying Laser Sources for CPO



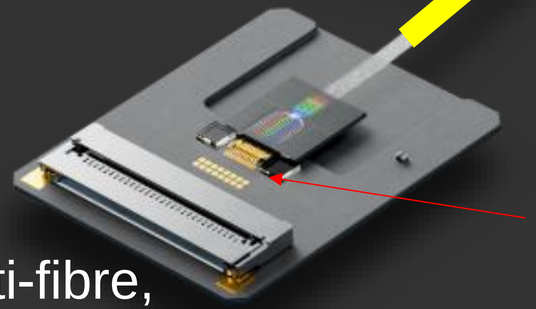
- Technology Leader in this space
- Built on 25yrs of Advanced Laser development
  in telecoms PON networks and sensing applications
- Significant strength in Design IP and patented technology
- Advanced wafer process technology
  - Ridge waveguide Laser architecture. ***Simple proven reliable technology***
  - Etched facet design. ***Leading to scalable high-volume manufacturing***
  - On-wafer optical coatings and On-wafer optical test. ***Increasing yield, driving costs down***
- Chip development and prototyping being produced in internal Glasgow Wafer Fab
- Process transfer underway to High Volume Asian Fab.

Co-Packaged Optics I/O Solution

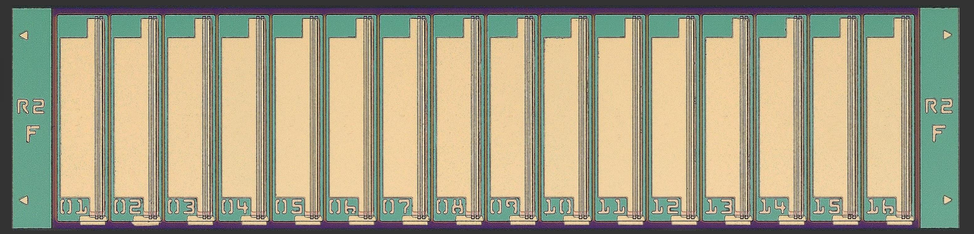
Ayar Labs TeraPHY™ CMOS Optical Interconnect Chiplets Converting data into the Optical Domain as locally as possible

Bi-directional data connectivity GPU-GPU

GPU/CPU/FPGA



Ayar SuperNova™ multi-fibre, multi-wavelength light source



Sivers 16x Wavelength Laser Array

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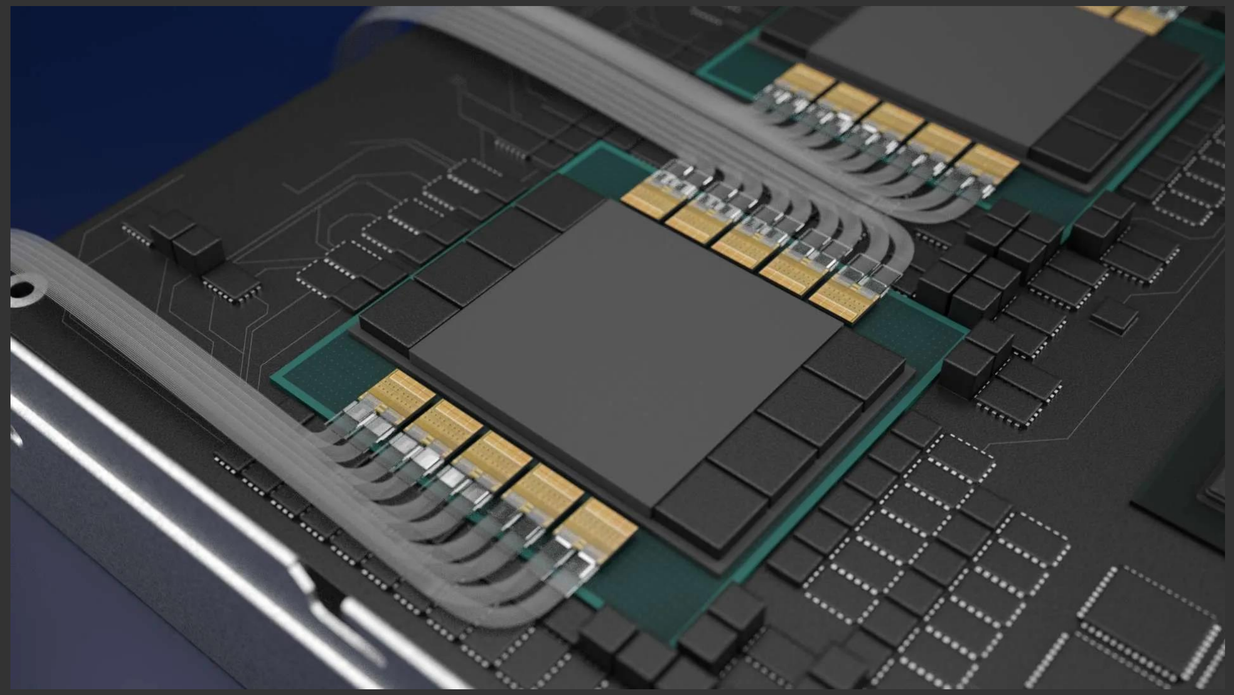
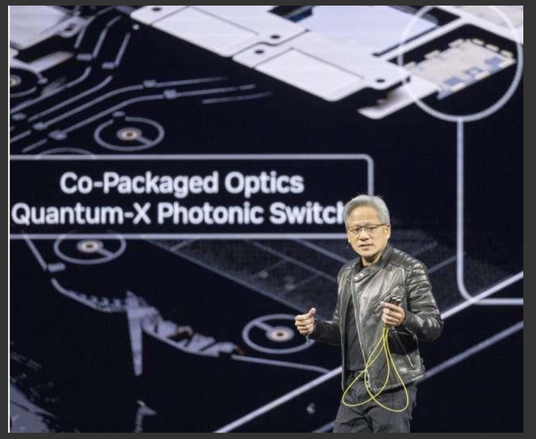
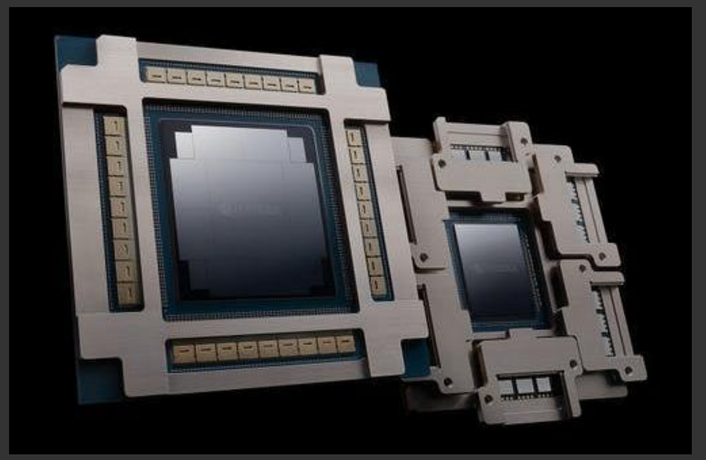
Silicon Photonics MRR Broader Landscape

AyarLabs



NVIDIA





GlobalFoundries®

tsmc

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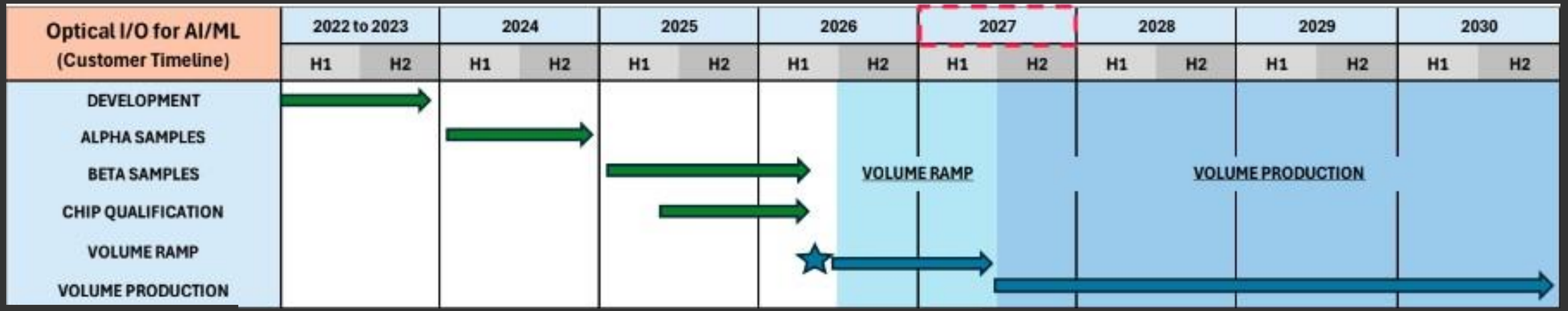
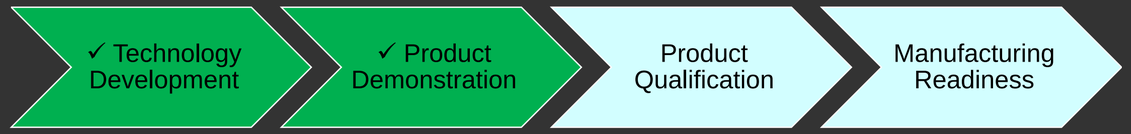
Industry MSA Consortium Defining Laser Standards for MRR Architecture

- Standards defined by Tier-1 Optics Companies including Sivers
- Demonstration of Intense Interest in MRR architecture
- Strong involvement from industry leaders

Volume Production 2027+





- Technology developed and hardened
- Production ramping with lead customers in 2027
- AI GPU shipments in 2028 forecasted to be 19.0m
- MRR Architecture requiring >5 laser sources per GPU

Summary

- Mega trends in AI infrastructure being driven by rapid increases in compute performance and demand for lower power consumption
- Current I/O solutions (Copper, Pluggable Optics) cannot deliver the required improvements
- Intense interest and activity now in Microring Resonator (MRR) Architecture for CPO-GPUs
- Remote Light Sources powering the MRRs are using proven multi-wavelength Laser Arrays
- Sivers is producing the leading chip performance in the market today for the leading customers in the market
- And here is the video from our partner Ayar Labs