

IT & Electronics

Field Intelligence Report

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Semiconductor Packaging / AI & Machine Learning / Quantum Computing / Photonics & Optical Comms

Market Mood

78

/ 100 Optimistic

AI-Quantum Convergence Accelerates

Advanced packaging, AI agents, quantum progress, and optical interconnects redefine IT infrastructure amidst supply constraints and geopolitical shifts.

Global Semiconductor Sales	AI Chip Market Funding	Advanced Packaging Revenue Growth	HBM Supply Shortfall
\$134.5B	\$4.97B	>70%	10-20%
2.2x YoY	—	20-point jump	—

Weekly Summary

AI demand is driving unprecedented investment and innovation across IT & Electronics. Semiconductor packaging, particularly HBM and advanced 2.5D/3D solutions, faces critical supply bottlenecks despite rapid capacity expansion. AI & ML are seeing massive M&A;, regulatory shifts, and enterprise adoption of AI agents. Quantum computing is accelerating towards fault-tolerant systems and PQC migration. Photonics is crucial for AI data centers, with NPO bridging CPO delays and becoming a geopolitical flashpoint. Western players must secure supply chains, invest in domestic capabilities, and navigate evolving regulatory landscapes to maintain competitive advantage.

4 Sub-Topic Summary

Sub-Topic	Headline	Momentum	Key Insight
Semiconductor Packaging	AI Demand Drives 2.5D/3D Packaging to 98% Yields, Faces ABF & HBM Bottlenecks	Accelerating	Advanced packaging, including CoWoS and SoIC, is achieving high yields (98-99%) but faces severe supply constraints in HBM and ABF substrates, with demand projected to double by 2027, leading to a 10-20% shortfall.

AI & Machine Learning	AI M&A; Nears \$1 Billion, Enterprise Agents Adopted, Global Regulations Tighten	Accelerating	AI M&A; activity is surging, exceeding \$980M in H1 2026, driven by talent and data acquisition. Enterprise AI agents like Microsoft Copilot Studio are gaining traction, while global regulations, particularly in China and the EU, are tightening on AI safety, ethics, and content transparency.
Quantum Computing	Quantum Computing Sees \$567M US Military Funding, PQC Migration by 2029, and 100-Qubit Systems Emerge	Accelerating	Quantum computing is advancing rapidly with significant government investment (e.g., \$567M US military funding). Major players like Google Cloud and Oracle are committing to Post-Quantum Cryptography (PQC) migration by 2029, while hardware progresses with 100+ qubit systems and novel architectures like neutral atoms and diamond-based qubits.
Photonics & Optical Comms	Near-Packaged Optics Bridges CPO Delays to 2029, US Considers Curbs on Chinese Hardware	Building	AI data centers are rapidly shifting to optical interconnects, with Near-Packaged Optics (NPO) emerging as an interim solution due to Co-Packaged Optics (CPO) mass production delays until 2029. Photonics is becoming a geopolitical flashpoint, with the US considering measures to prevent Chinese dominance in AI data center optical layers.

JSR Expands EUV Metal Oxide Resist Production in South Korea

Source: Gemini Grounding / JSR Corporation (TDnet)

Summary: JSR Corporation is establishing a new facility in South Korea for the final manufacturing processes of Metal Oxide Resist (MOR), with operations anticipated to commence in 2026. This expansion aims to bolster the supply of advanced MOR materials, which offer s...

WHY ENGINEERS SHOULD CARE

Teams targeting sub-3nm logic or advanced memory nodes should monitor JSR's MOR ramp-up in 2026. This capacity is critical for EUV lithography yield and throughput, directly impacting the availability...

Shin-Etsu Chemical Raises Silicon Wafer Prices Amid HBM-Driven Shortages

Source: Gemini Grounding / Shin-Etsu Chemical (TDnet)

Summary: Shin-Etsu Chemical implemented its second price hike of the year in May, increasing standard 12-inch wafer prices by 5-8% and high-end wafers for AI/HPC applications by 18-22%. This is driven by burgeoning High-Bandwidth Memory (HBM) demand, transitioning the ...

WHY ENGINEERS SHOULD CARE

Procurement and supply chain teams should factor in continued silicon wafer price increases, particularly for HBM and advanced packaging requiring high-end wafers. Evaluate potential cost impacts on B...

Japan's METI Boosts 2nm & HBM Production with Trillion-Yen Subsidies

Source: Gemini Grounding / METI

Summary: Japan's Ministry of Economy, Trade and Industry (METI) has allocated significant subsidies to bolster domestic semiconductor manufacturing. Rapidus is set to receive approximately 2.9 trillion JPY to achieve world-first 2nm mass production, while Micron's Hiro...

WHY ENGINEERS SHOULD CARE

Technical planners should track Rapidus's 2nm progress as a potential future foundry option, especially for secure domestic supply chains. For HBM, monitor Micron Hiroshima's ramp-up as it directly im...

This Week's Japan Technology Highlights

Japan pushes advanced chip tech: METI commits ~2.9T JPY for Rapidus 2nm, JSR expands EUV photoresist capacity for sub-3nm nodes by 2026.

Huawei Kirin 2026 & SMIC Advanced Process: Unpacking Claims of 5nm-Class Capabilities

■ China's Move

Huawei's upcoming Kirin 2026 chip, set to power flagship Mate handsets in autumn 2026, is claimed to feature a "LogicFolding" architecture and "Tau Scaling Law" that theoretically increase transistor density to 238 MTr/mm², rivaling Intel's 18A and TSMC's 3nm....

■ Technical Verification

[CONFIRMED]

SMIC reported record Q2 2026 revenue of \$3 billion, with 93.7% capacity utilization. (SMIC Q2 2026 Financials) / SMIC is conducting pilot runs for its 5nm process. (SMIC)

[BOTTLENECK]

Achieving competitive yield rates and consistent performance/power metrics for advanced nodes (5nm and beyond) without access to leading-edge lithography (EUV). / Scaling 3D integration technologies...

■ Implications for Western Engineers

- Competitive Analysis: Benchmark claimed Kirin 2026 specs (density, PPA) against your current and future designs. Focus on indepe...
- Process Technology Teams: Analyze teardowns of Kirin 2026 (when available) for insights into SMIC's 5nm process capabilities and...
- Design Tooling: Evaluate the implications of Huawei's claimed architectural innovations on EDA tool requirements and design meth...

CXMT DRAM Expansion and LPDDR6 Development: Scaling Capacity and Advanced Memory

■ China's Move

ChangXin Memory Technologies (CXMT) is considering building a sixth DRAM fab, potentially more than doubling its current output, with Citrini Research projecting capacity to reach 350,000 WSPM by end of 2026 and 950,000 WSPM by 2030. CXMT is entering the mobil...

■ Technical Verification

[CONFIRMED]

CXMT operates three 300-mm DRAM fabs with an estimated combined output of 300,000 wafers per month. (Industry estimates) / CXMT is building additional facilities near Shanghai and Hefei. (Reports)

[BOTTLENECK]

Achieving competitive yield rates, power efficiency, and long-term reliability for advanced DRAM nodes (e.g., LPDDR6) at scale. / Developing robust process control and quality assurance for high-vol...

■ Implications for Western Engineers

- Memory Design & Procurement: Evaluate CXMT's LPDDR6 samples (if obtainable) against current industry standards for bandwidth, la...
- Supply Chain Resilience: Assess CXMT's growing capacity as a potential alternative or secondary source, especially given AI-driv...
- Competitive Intelligence: Monitor CXMT's technology roadmap for mobile and server DRAM, including HBM, to understand competitive...

Key Trends This Week (5 Total)

TR-01 HIGH Cross-Domain

AI-Driven Infrastructure Bottlenecks Intensify

AI Demand Creates 10-20% Supply Shortfall in Advanced Packaging & HBM by 2027

The explosive growth of AI is driving unprecedented demand for advanced semiconductor packaging (CoWoS, SoIC) and High Bandwidth Memory (HBM). Despite significant capacity expansions by TSMC, Samsung, and SK Hynix, a 10-20% supply shortfall is projected by 2027. This bottleneck extends to critical materials like ABF substrates and specialized bonding equipment, necessitating urgent supply chain diversification and investment.

Global CoWoS demand	HBM4 price hike	Ibiden ABF investment
2.5-2.7M wafers by 2027	70%	¥500B

► NVIDIA ► TSMC ► SK Hynix ► Samsung ► Applied Materials

Refs: S1-01 S1-03 S1-04 S1-08 S1-16 S1-20 S1-24 S1-27 S1-34

TR-02 HIGH AI & Machine Learning

Global AI Regulatory Landscape Fragmenting

China Enacts Strict AI Regulations, EU AI Act Influences Global Transparency, US Advances Sector-Specific Bills

The global AI regulatory environment is rapidly evolving and fragmenting. China has enacted stringent rules for AI agents and companions, mandating algorithm registration and ethical reviews, impacting multinational corporations. The EU AI Act's transparency requirements (e.g., watermarking) are influencing global practices. The US is advancing sector-specific legislation for education, companion safety, and copyright, creating a complex compliance challenge for AI developers and deployers.

China AI companion regulations effective	Anthropic watermarks Claude models	US AI bills advancing
July 15, 2026	post-Aug 2, 2026	as of Aug 7, 2026

► Microsoft ► Anthropic ► Meta ► Google ► US Government

Refs: S2-02 S2-03 S2-09 S2-11 S2-12 S2-40 S2-43

TR-03 MED Quantum Computing

Quantum Computing & PQC Commercialization Accelerates

US Government Boosts Quantum Funding to \$567M, Google Targets 2029 PQC Migration, IonQ Revenue Up 287%

Quantum computing is moving from research to commercialization, driven by significant government investment and strategic partnerships. The US Congress proposes a 68% increase in military quantum funding to \$567M. Major tech companies like Google Cloud and Oracle are committing to full Post-Quantum Cryptography (PQC) migration by 2029 to counter "Store Now, Decrypt Later" threats. Hardware advancements include 100+ qubit systems and novel architectures, with IonQ reporting 287% YoY revenue growth.

US military quantum funding	Google Cloud PQC migration target	IonQ Q2 2026 revenue growth
\$567M	2029	287% YoY

► Google ► Oracle ► IonQ ► Quantinuum ► Pasqal

Refs: S3-04 S3-05 S3-06 S3-08 S3-14 S3-15 S3-17 S3-19 S3-20 S3-32 S3-40

TR-04 MED

Photonics & Optical Comms

Photonics Becomes Geopolitical & Interconnect Battleground

Near-Packaged Optics Gains Traction as CPO Delays to 2029, US Considers Curbs on Chinese Optical Hardware

The shift from copper to optical interconnects in AI data centers is accelerating, but Co-Packaged Optics (CPO) faces mass production delays until 2029. Near-Packaged Optics (NPO) is emerging as a critical interim solution. This technological transition is now a geopolitical flashpoint, with the US considering measures to prevent Chinese dominance in AI data center optical layers, highlighting the strategic importance of silicon photonics and integrated supply chains.

CPO mass production delay	NVIDIA Spectrum-X Photonics launch	Coherent CPO target
to 2029	Q4 2026	6.4T

► NVIDIA ► Broadcom ► Coherent ► Lightmatter ► US Government

Refs: S4-01 S4-02 S4-03 S4-04 S4-05 S4-08

TR-05 LOW

AI & Machine Learning

AI Agent & Automation Market Expands with Observability Focus

Enterprise AI Agent Platforms Like Microsoft Copilot Studio Lead 2026 Automation, Driving Need for AI Observability

Enterprise AI agent platforms are rapidly maturing, with solutions like Microsoft Copilot Studio and Google Gemini Enterprise leading the charge in automating complex workflows and exception handling. This expansion is driving significant investment in AI observability and runtime monitoring platforms (e.g., Arize AI, FriskAI) to address unique failure modes like model drift and hallucination, ensuring safety and compliance in regulated industries.

Microsoft Copilot Studio	Skan AI funding	FriskAI pre-seed funding
Top platform for 2026	\$63M	\$3.6M

► Microsoft ► Google ► Salesforce ► Dynatrace ► Skan AI

Refs: S2-05 S2-13 S2-18 S2-30 S2-32

Macro Market Indicators

Indicator	Direction	Value	Note	Source
US CHIPS Act Funding	↑	\$874M	Committed to seven semiconductor companies for AI, advanced packaging, and supply chain security.	U.S. Commerce Department (S1-28)
US Military Quantum Funding	↑	\$567M	Proposed 68% annual increase to drive federal quantum development.	U.S. Congress (S3-15)
Global AI M&A; Deals	↑	\$980M	Totaled in H1 2026, already exceeding the \$624M recorded for all of 2025.	The Economic Times (S2-01)
Global Semiconductor Capital Investment	↑	\$240B	Projected 30% YoY surge in 2026, driven by AI inference demand.	Soka Technology (S1-32)

Macro Environment Summary

Global IT & Electronics markets are experiencing a significant boom, primarily driven by insatiable AI demand. Governments, particularly the US, are actively investing hundreds of millions in domestic semiconductor and quantum capabilities to secure supply chains and maintain technological leadership. This has led to a surge in M&A; activity and capital expenditure, but also exposed critical bottlenecks in advanced packaging and HBM supply, necessitating strategic responses from industry players.

Market Data: SOXX (Semiconductors) Weekly Trend

550.42 USD +1.32%

CoWoS/SoIC Supply-Demand Gap 1.3-1.4M wafers (2026) → 2.5-2.7M wafers (2027):
Doubling demand

10-20% supply shortfall by 2027

Action Recommendations by Player

Action Recommendations for Western OEM

OEM NVIDIA, AMD, Intel

Western OEMs like NVIDIA and AMD are driving AI chip demand, pushing for advanced packaging and HBM. NVIDIA's Feynman platform and Vera Rubin adoption of HBM4 (S1-02, S1-12) exemplify this, but they face 10-20% supply shortfalls in packaging by 2027 (S1-03).

Risk

- If HBM and ABF substrate shortages persist beyond 2027, Western OEMs without secured supply contracts will face significant production delays and market share loss
- Escalating geopolitical tensions could disrupt access to critical advanced packaging and optical interconnect components, impacting product roadmaps

Opportunity

- Invest in co-development with Western foundries and material suppliers to secure next-gen packaging capacity and ABF substrate supply, targeting the \$240B semiconductor capital investment in 2026
- Integrate Near-Packaged Optics (NPO) solutions to bridge Co-Packaged Optics (CPO) delays, gaining a near-term advantage in AI data center efficiency

Actions This Week

- By Q4 2026, establish joint development agreements with Western material suppliers for ABF and glass substrates to de-risk 2028+ supply
- Immediately initiate Q4 2026 strategic sourcing reviews for HBM4 and ABF substrates with multiple Western and allied suppliers to identify potential supply gaps

□ Scenario: If TSMC's 2027 CoWoS/SoIC capacity expansion still results in a 10-20% shortfall, Western OEMs must diversify advanced packaging partners and invest in alternative technologies like NPO to avoid critical product launch delays.

□ Quick Win : Schedule Q3 2026 meetings with leading Western advanced packaging foundries (e.g., GlobalFoundries) to discuss capacity reservation and technology roadmaps.

Action Recommendations for Western Contract Manufacturer

Foundry GlobalFoundries, SkyWater Technology

Western foundries like GlobalFoundries (implied by US CHIPS Act funding) and SkyWater Technology (acquired by IonQ for \$1.8B, S3-41) are expanding capacity, supported by US government incentives (\$874M, S1-28) to bolster domestic semiconductor and quantum manufacturing.

Risk

- If Asian competitors like TSMC and Samsung continue to outpace Western capacity expansion in advanced packaging, Western foundries risk losing market share in high-value AI chip production
- High capital expenditure for advanced packaging technologies may not yield sufficient ROI if AI demand fluctuates or technology shifts rapidly

Opportunity

- Leverage CHIPS Act funding to accelerate advanced packaging (e.g., 2.5D/3D, FOPLP) and PQC-enabled secure element production, targeting the \$240B global capital investment in 2026
- Partner with Western quantum computing firms to offer specialized manufacturing for quantum hardware components and photonic integrated circuits

Actions This Week

- By Q1 2027, finalize CHIPS Act funding applications and initiate construction for new advanced packaging lines to meet projected 2028 AI demand

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- Develop a dedicated roadmap for PQC-enabled secure element manufacturing by Q3 2026, targeting automotive and critical infrastructure sectors

□ Scenario: If US/EU government funding for advanced packaging and quantum manufacturing significantly increases, Western foundries should prioritize investments in 3D/2.5D IC packaging and PQC-enabled secure elements to capture strategic market share.

□ **Quick Win** : Engage with the U.S. Commerce Department this week to understand specific CHIPS Act incentives for advanced packaging and PQC manufacturing.

Action Recommendations for Western T&M; Provider

T&M; KLA, Teradyne

Western T&M; providers like KLA are experiencing robust growth, forecasting \$1.1B in advanced packaging revenue for 2026 (S1-05), driven by the need for sophisticated inspection and metrology tools for hybrid bonding and nanometer-level precision in AI chips.

■ Risk

- If advanced packaging yields (e.g., CoWoS at 98-99%, S1-01) stabilize rapidly, demand for certain inspection tools might plateau, requiring T&M; providers to innovate for next-gen technologies like glass substrates
- Failure to adapt to the unique testing requirements of quantum hardware and PQC-enabled devices could lead to missed market opportunities

■ Opportunity

- Develop specialized inspection and metrology solutions for glass substrates and FOPLP, targeting the \$240B semiconductor capital investment in 2026, and for quantum hardware
- Offer AI-powered observability and validation tools for complex 3DIC systems, addressing system-level reliability challenges (S1-35)

■ Actions This Week

- By Q3 2026, launch R&D; initiatives for metrology tools specifically designed for glass core substrates and 4.5-micron hybrid bonding pitches (S1-01)
- Partner with quantum computing firms by Q4 2026 to develop testing and validation protocols for quantum processors and PQC-enabled secure elements

□ Scenario: If AI chip complexity continues to outpace current metrology capabilities, Western T&M; providers must invest heavily in AI-powered inspection and real-time process control to maintain market leadership and enable next-gen packaging.

□ **Quick Win** : Schedule Q4 2026 technical deep-dives with leading Western foundries and material suppliers to identify emerging metrology gaps for 2028+ packaging roadmaps.

Action Recommendations for Western Material Supplier

Material Resonac, DuPont, Dow

Western material suppliers are critical for advanced packaging, with Resonac reporting 46% growth in AI backend materials (S1-33). However, the industry faces bottlenecks in ABF substrates, prompting Asian suppliers like Ibiden to invest ¥500B (S1-04).

■ Risk

- If Western material suppliers fail to rapidly scale production of critical materials like ABF substrates and glass core substrates, they risk losing market share to Asian competitors and exacerbating global supply chain issues
- Reliance on single-source raw materials for advanced packaging could create vulnerabilities to geopolitical disruptions or natural disasters

■ Opportunity

- Invest in R&D; and capacity expansion for ABF substrates, glass core substrates, and advanced bonding materials, targeting the \$240B semiconductor capital investment in 2026
- Develop AI-driven material discovery platforms to accelerate the creation of new materials for thermal management and quantum hardware (S2-24, S2-26)

■ Actions This Week

- By Q1 2027, announce significant capital expenditure plans for ABF substrate and glass core substrate manufacturing in Western regions to secure long-term supply for OEMs
- Form strategic partnerships with Western AI startups (e.g., Discovered Materials) by Q4 2026 to co-develop AI-driven material discovery for next-gen semiconductors

□ Scenario: If ABF and glass substrate shortages become the primary constraint for AI chip production by 2028, Western material suppliers must aggressively invest in domestic capacity and R&D; to become strategic, indispensable partners for Western OEMs and foundries.

□ Quick Win : Initiate immediate discussions with key Western OEM and foundry partners to secure long-term supply contracts and co-investment opportunities for ABF and glass substrate capacity.

Action Recommendations for Western Distributor

Distributor Arrow Electronics, Avnet

Western distributors face a volatile market with surging demand for AI-related components (HBM, advanced chips) but also significant supply chain bottlenecks and geopolitical risks (S1-19, S4-03).

■ Risk

- If geopolitical tensions escalate, leading to trade restrictions on critical AI components or materials, Western distributors could face severe supply disruptions and inventory challenges
- Failure to adapt to rapid technology shifts (e.g., NPO vs. CPO) could lead to obsolete inventory or inability to meet customer demand for cutting-edge components

■ Opportunity

- Specialize in value-added services for advanced packaging components and PQC-enabled hardware, offering supply chain resilience and security solutions to Western OEMs
- Develop expertise in sourcing and distributing Near-Packaged Optics (NPO) components to capitalize on the interim market demand before CPO mass production (S4-01)

■ Actions This Week

- By Q4 2026, develop a dedicated "AI & Quantum Secure Supply Chain" service offering, focusing on certified components and PQC-compliant hardware
- Establish strategic partnerships with Western NPO component manufacturers by Q3 2026 to secure early access to supply for AI data center customers

□ Scenario: If AI component supply remains constrained through 2027, Western distributors must pivot from simple logistics to strategic sourcing and inventory management, offering guaranteed supply contracts and risk mitigation services to OEMs.

□ Quick Win : Conduct a comprehensive risk assessment of current AI component supply chains this month, identifying single points of failure and potential alternative Western sources.

Action Recommendations for Western Equipment Maker

Equipment Applied Materials, KLA, ASML, Teradyne

Western equipment makers like Applied Materials and KLA are seeing robust growth, with Applied Materials planning to double semiconductor systems output by 2028 (S1-06) and KLA forecasting >70% advanced packaging revenue growth (S1-05).

Risk

- If Asian competitors (e.g., HANMI for bonders, S1-24) gain significant market share in specialized advanced packaging equipment, Western makers could lose their competitive edge in critical AI infrastructure
- High R&D; costs for next-generation equipment (e.g., for 4.5-micron hybrid bonding) may not be recouped if market adoption is slower than anticipated

Opportunity

- Innovate in equipment for hybrid bonding, FOPLP, glass substrates, and quantum hardware manufacturing, targeting the \$240B global capital investment in 2026
- Develop advanced process control and metrology tools for co-packaged optics (CPO) and near-packaged optics (NPO) to support the transition in AI data centers (S4-01, S4-05)

Actions This Week

- By Q3 2026, accelerate R&D; for next-generation bonding and deposition tools compatible with 4.5-micron pitches and glass core substrates
- Host a "Next-Gen Packaging Equipment Summit" by Q4 2026 with leading Western OEMs and foundries to co-define requirements for 2028+ AI hardware manufacturing

□ Scenario: If the shift to 3D/2.5D packaging and chiplets accelerates faster than anticipated, Western equipment makers must prioritize modular, high-precision tools for heterogeneous integration and advanced metrology to capture the expanding market.

□ Quick Win : Register for the SEMICON West 2027 conference this week to showcase next-gen advanced packaging equipment and secure early customer commitments.

Impact Matrix (Players × Trends)

++ = Strong Tailwind + = Tailwind 0 = Neutral – = Headwind -- = Strong Headwind

Player	TR-01 HIGH AI-Dri	TR-02 HIGH Global	TR-03 MED Quantu	TR-04 MED Photon	TR-05 LOW AI Age
OEM	++	--	–	++	0
Foundry	++	+	0	++	+
T&M;	++	+	0	++	0
Material	++	–	–	+	0
Distributor	+	--	--	0	0
Equipment	++	+	0	++	0

Timeline This Week (9 Events)

Date	Tag	Headline	Source
2026-08-06	policy	China mandates AI algorithm registration and ethical review for AI agents, impacting multinational corporations.	China S2-02
2026-08-06	product	Oracle integrates hybrid Post-Quantum Cryptography (PQC) for TLS 1.3 in JDK 27, extending support to key LTS JDK releases by 2027.	USA S3-08
2026-08-07	policy	Illinois establishes a \$3M X-Labs Fast Fund to attract NSF Quantum Teams, bolstering its quantum hub status with \$200M state investment.	USA S3-07
2026-08-08	milestone	Samsung targets top HBM market share next year with aggressive HBM4 investments, attracting NVIDIA and AMD interest.	South Korea S1-13
2026-08-10	deal	IonQ completes its \$1.8B acquisition of SkyWater Technology, becoming the only vertically integrated full-stack quantum computing company.	USA S3-41
2026-08-11	policy	Google Cloud unveils its roadmap for full Post-Quantum Cryptography (PQC) migration by 2029, mitigating "Store Now, Decrypt Later" risks.	USA S3-05
2026-08-12	milestone	TSMC achieves over 98% CoWoS yield for 5.5x reticle AI chip products, but ABF substrates emerge as the next bottleneck.	Taiwan S1-01

Date	Tag	Headline	Source
2026-08-13	milestone	Near-Packaged Optics (NPO) gains momentum as Co-Packaged Optics (CPO) mass production faces delays until 2029.	USA S4-01
2026-08-14	policy	US President Trump signs Executive Order 14413 to accelerate quantum innovation, bolstering supply chains and launching QC-ADDS.	USA S3-06

Company Spotlight

NVIDIA [NVDA] ↑ Accelerates Feynman AI Platform, Adopts HBM4

Driving demand for advanced packaging and HBM, but faces supply constraints in CoWoS and SoIC, impacting AI hardware deployment.

- Secure long-term HBM and advanced packaging capacity with multiple partners by Q4 2026
- Invest in NPO solutions to bridge CPO delays and ensure continuous AI infrastructure build-out

Microsoft [MSFT] ↑ Copilot Reaches 30M Paid Seats, \$175B AI Data Center Investment

Strong AI enterprise adoption and strategic partnerships, but faces investor scrutiny over massive capital expenditures for AI infrastructure.

- Clearly articulate ROI for AI data center investments by Q1 2027 to reassure investors
- Strengthen European AI market presence through Mistral investment and focus on data sovereignty

IonQ [IONQ] ↑ Q2 Revenue Up 287%, Acquires SkyWater for \$1.8B

Rapidly commercializing quantum computing, becoming vertically integrated, and securing key government contracts for quantum hardware.

- Leverage SkyWater acquisition to accelerate full-stack quantum platform development and domestic manufacturing
- Expand quantum communications research center in Chattanooga to lead U.S. quantum networking development

Technology Roadmap

2026

- ◆ AI Chip Market Funding Nears \$5B
- ◆ Global Semiconductor Capital Investment Surges 30% to \$240B
- ◆ Microsoft Copilot Reaches 30M Paid Seats
- ◆ Intel Plans EMIB-T Launch

2027

- ◆ HBM Supply Shortfall of 10-20% Persists
- ◆ TSMC SoIC Capacity Ramps to 50K Wafers/Month
- ◆ Oracle Extends PQC Support to Key LTS JDK Releases
- ◆ NVIDIA Vera Rubin Platform Adopts 12-Layer HBM4

2028

- ◆ Samsung Electro-Mechanics Targets Glass Substrate Mass Production
- ◆ Applied Materials Aims to Double Semiconductor Systems Output
- ◆ Ibiden ABF Substrate Supply Crunch Anticipated
- ◆ NXP to Double Malaysia Backend Capacity

2029

- ◆ Google Cloud Targets Full PQC Migration
- ◆ TSMC Targets 4.5-micron Hybrid Bonding Pitches
- ◆ Co-Packaged Optics (CPO) Mass Production Expected

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- ◆ JEDEC HBM4 Package Height Relaxation Enables 16-Hi Stacks

2030

- ◆ Ajinomoto Plans Significant ABF Capacity Increases
- ◆ Global 3D/2.5D IC Packaging Market Accelerates
- ◆ IonQ Projects Quantum Market to Reach \$21.87B by 2035
- ◆ TSMC Targets 14x Reticle Size CoWoS Expansion

References (129 Total)

ID	Title	Source	Date	Region	Sub-Topic
S1-01	TSMC Achieves Over 98% CoWoS Yield; ABF Substrates Emerge as Next Bottleneck for AI Chip Expansion	Xenospectrum	2026-08-12	Taiwan	Semiconductor Packaging
S1-02	NVIDIA Accelerates Feynman AI Platform; TSMC Ramps SoIC Capacity to 50K Wafers/Month by 2027	Benzinga	2026-08-14	Taiwan	Semiconductor Packaging
S1-03	AI Demand Strains CoWoS and SoIC Supply: Global Demand to Double to Over 2.5M Wafers by 2027, Facing 10-20% Shortfall	Exponential Industry	2026-08-11	US	Semiconductor Packaging
S1-04	Ibiden Commits ¥500 Billion to ABF Substrates for AI Servers, Anticipating Supply Crunch Beyond 2028	MK	2026-08-06	Japan	Semiconductor Packaging
S1-05	KLA Forecasts \$1.1 Billion in Advanced Packaging Revenue for 2026, Driven by Surging AI and HBM Demand	Quartz	2026-08-10	US	Semiconductor Packaging
S1-06	Applied Materials Reports \$9.12 Billion in Q3 2026 Revenue, Plans to Double Semiconductor Systems Output by 2028 Amid Surging Demand	GlobeNewswire	2026-08-13	US	Semiconductor Packaging
S1-07	JEDEC Relaxes HBM4 Package Height to 775 µm, Enabling 12-Hi/16-Hi Stacks Without Immediate Cu-Cu Hybrid Bonding	Exponential Industry	2026-08-12	US	Semiconductor Packaging
S1-08	TSMC CoWoS & SoIC Packaging Become Primary AI Chip Bottleneck, Forecasting 10-20% Global Supply Shortfall by 2027 Amidst Doubling Demand	Exponential Industry	2026-08-11	Taiwan	Semiconductor Packaging
S1-09	Samsung Unveils zHBM, a 3D Logic-Memory Integrated AI Architecture, Alongside HBM4E/HBM5 Roadmap at FMS 2026	Samsung Semiconductor	2026-08-12	South Korea	Semiconductor Packaging
S1-10	TSMC Doubles Advanced Packaging Capacity Over Three Years; Samsung Expands 2nm & Advanced Packaging Collaboration with Broadcom	BigGo Finance	2026-08-13	Taiwan	Semiconductor Packaging
S1-11	TSMC Achieves 98-99% Yield for AI Products on CoWoS 5.5x Process, Targets 14x Reticle Size Expansion by 2029	Wccftech	2026-08-12	Taiwan	Semiconductor Packaging
S1-12	Micron Initiates Mass Production of 36GB 12-Layer HBM4 for NVIDIA Vera Rubin, Boosts US Semiconductor Investment Over \$250 Billion	openPR.com	2026-08-13	US	Semiconductor Packaging
S1-13	Samsung's Aggressive HBM4 Investment Targets Top HBM Market Share Next Year, Attracting NVIDIA and AMD Interest	Sammy Fans	2026-08-08	South Korea	Semiconductor Packaging

ID	Title	Source	Date	Region	Sub-Topic
S1-14	ECTC 2026 Highlights Advanced Packaging Future: Glass Substrates and FOPLP at the Core of System Innovation	Advanced Packaging Magazine	2026-08-11	US	Semiconductor Packaging
S1-15	APC 2026: Advanced Packaging, Interconnects, and Chiplets Propel AI Systems Beyond Traditional Scaling	SEMI Europe	2026-08-15	Europe	Semiconductor Packaging
S1-16	SK Hynix Poised to Dominate HBM4 Market with 70% Price Hike and \$7B Global Investment for AI Acceleration	SK Hynix	2026-08-15	South Korea	Semiconductor Packaging
S1-17	AI Accelerates Shift to Panel Level Packaging (PLP) and Glass Core Substrates, Positioning Them as Pillars of Next-Gen Packaging	IEEE / Presentation	2026-08-15	US	Semiconductor Packaging
S1-18	Samsung HBM4 Yield Dramatically Improves from Under 60% to 80%; SK Hynix Labor Talks Stall, Intensifying AI Memory Race	TrendForce	2026-08-10	Taiwan	Semiconductor Packaging
S1-19	2026 Chip Crisis Sounds Hardware Wake-Up Call: AI Demand Reshaping Semiconductor Supply Chains	Trax Technologies	2026-08-13	US	Semiconductor Packaging
S1-20	HBM Supply Crisis of 2026 Projected to Persist Until 2027, Redefining AI Hardware Deployment Bottleneck	EnkiAI	2026-08-15	US	Semiconductor Packaging
S1-21	Bonafide Research: Global 3D/2.5D IC Packaging Market Accelerates with UCIe Standard, Forecasts Growth Through 2031	Bonafide Research	2026-08-08	India	Semiconductor Packaging
S1-22	IDTechEx Analyzes New 2.5D/3D Semiconductor Packaging Trends: Glass Interposers and Hybrid Bonding Drive Evolution	IDTechEx	2026-08-15	UK	Semiconductor Packaging
S1-23	IMAPS Device Packaging Conference 2026 Details 3D/2.5D Packaging Advances: FOPLP, Hybrid Bonding Drive Demand	IMAPS	2026-08-15	US	Semiconductor Packaging
S1-24	HBM Supply Crunch: Long Backlogs for Bonding Equipment and Low Yields Create Bottleneck, Constraining AI Demand Until 2027	AI CERTs News	2026-08-15	US	Semiconductor Packaging
S1-25	Samsung Electro-Mechanics Fast-Tracks Glass Substrates for AI Chip Packaging, Challenging Japanese Rivals for 2028 Mass Production	BusinessKorea	2026-08-14	South Korea	Semiconductor Packaging
S1-26	Samsung Electro-Mechanics Sees Semiconductor Package Substrate Utilization Rate Soar to 89%, Driven by AI Data Center Demand	□□□□ (Yonhap News)	2026-08-14	South Korea	Semiconductor Packaging

ID	Title	Source	Date	Region	Sub-Topic
S1-27	Applied Materials Significantly Upscales 2026 Advanced Packaging Growth Forecast to Over 70% as AI Chip Investment Shifts to HBM and Multi-Layer Integration	Xenospectrum	2026-08-14	US	Semiconductor Packaging
S1-28	U.S. Commerce Department to Invest Up to \$874 Million in Seven Semiconductor Companies Across AI, Advanced Packaging, and Supply Chain Security	AnySilicon	2026-08-10	US	Semiconductor Packaging
S1-29	Samsung Electro-Mechanics Doubles Down on AI: Vietnam Plant to Lead Advanced Packaging Substrate Surge	Vietnam Korea Times	2026-08-08	Vietnam	Semiconductor Packaging
S1-30	ASMPT's Advanced Packaging Business Achieves Record H1 2026 Sales Driven by Surging AI Demand; Panel-Level Packaging Positioned as Key Future Growth Driver	ASMPT Corporate (Press Release)	2026-08-11	Hong Kong	Semiconductor Packaging
S1-31	Intel Foundry Boosts AI Data Center Compute with Foveros and EMIB Advanced Packaging, EMIB-T Launch Planned for 2026	ET Datacenters	2026-08-10	India	Semiconductor Packaging
S1-32	Global Semiconductor Capital Investment to Surge 30% to \$240 Billion in 2026, Driven by AI Inference Demand; Advanced Packaging Fuels Multi-Year Double-Digit Growth	Soka Technology	2026-08-10	Unknown	Semiconductor Packaging
S1-33	NXP to Double Malaysia Backend Capacity by Q1 2028; Resonac Reports 46% Growth in AI Backend Materials	note	2026-08-12	Japan	Semiconductor Packaging
S1-34	Global Semiconductor Sales Soar 2.2x to Record \$134.5 Billion in June 2026; TSMC Achieves Over 99% CoWoS Yield But Flags HBM and ABF Substrate Bottlenecks	Amiko Consulting	2026-08-11	Japan	Semiconductor Packaging
S1-35	TSMC Declares AI Advanced Packaging Competition Shifts to System-Level Reliability and Validation, Highlighting 3DIC Importance at OCP APAC 2026	digitimes	2026-08-12	Taiwan	Semiconductor Packaging
S2-01	Global AI M&A: Deals Approach \$1 Billion in H1 2026, Significantly Outpacing Previous Year	The Economic Times	2026-08-14	India	AI & Machine Learning
S2-02	China Intensifies AI Regulation in 2026 with Mandatory Algorithm Registration and Ethical Review for AI Agents	techletter by Nesibe	2026-08-06	China	AI & Machine Learning
S2-03	China Enacts First-Ever AI Companion Regulations, Halting Major Services and Mandating Measures Against Emotional Over-Reliance	Just Security	2026-08-06	China	AI & Machine Learning
S2-04	Microsoft's AI Growth Strategy Rebuilds Investor Confidence Through OpenAI Partnership and Enterprise Integration	Yahoo Finance	2026-08-08	US	AI & Machine Learning

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S2-05	Enterprise AI Agent Market Crowns Microsoft Copilot Studio, Google Gemini Enterprise Among Top Platforms for 2026 Automation	200OK Solutions	2026-08-07	US	AI & Machine Learning
S2-06	Anthropic Defaults Claude Code to 'Auto Mode,' Dramatically Boosting Developer Programming Efficiency	The Times of India	2026-08-11	India	AI & Machine Learning
S2-07	Microsoft's \$175 Billion AI Data Center Expansion Sparks Investor Debate: Growth Engine or Capex Trap?	Zacks Equity Research	2026-08-11	US	AI & Machine Learning
S2-08	Mark Zuckerberg's 6500-Word Essay Outlines Meta's AI Vision: Open AI as a Catalyst for Prosperity and Freedom	About Meta (Meta Official Blog)	2026-08-10	US	AI & Machine Learning
S2-09	Anthropic Integrates Machine-Readable Watermarks into Claude Models for Enhanced AI-Generated Content Transparency	Facebook (Anthropic post)	2026-08-12	US	AI & Machine Learning
S2-10	Meta AI Model Demonstrates System Intrusion Capability During Testing, Heightening Cybersecurity Concerns	YouTube (DWS News)	2026-08-06	International	AI & Machine Learning
S2-11	China's AI Personalization Service Management Interim Measures Take Effect, Imposing Compliance Obligations on Multinational Corporations	Kiteworks	2026-08-11	China	AI & Machine Learning
S2-12	US AI Legislative Update: Bills Mandating AI Policy in Education, Companion Safety, and Copyright Protection Advance	Transparency Coalition	2026-08-07	US	AI & Machine Learning
S2-13	Microsoft 365 Copilot Reaches 30 Million Paid Seats; OpenAI Designated Subprocessor, Mistral Investment Boosts European Market Presence	YouTube (Empowering.Cloud)	2026-08-06	US	AI & Machine Learning
S2-14	Microsoft Advertising Unveils Enhanced AI Visibility, Performance Max, and Ad Preview Updates to Empower Advertisers' AI Adoption	ALM Corp	2026-08-13	US	AI & Machine Learning
S2-15	SpaceX/xAI Acquires AI Coding Platform Cursor Amidst \$600 Billion Pending M&A; Deals	DealRoom.net	2026-08-08	US	AI & Machine Learning
S2-16	Y Combinator-Backed Research Enhances Interpretability and Safety for Robot Foundation Models, Advancing Secure Physical AI Deployment	YouTube (Y Combinator)	2026-08-06	US	AI & Machine Learning
S2-17	AI Chip Market Funding Soars to \$4.97 Billion, Driven by Investment in Dedicated Inference Processors	New Market Pitch	2026-08-08	US	AI & Machine Learning
S2-18	Dynatrace Acquires Arize AI to Accelerate Self-Improving Software and AI Observability Capabilities	Tech Lens Media	2026-08-13	US	AI & Machine Learning

ID	Title	Source	Date	Region	Sub-Topic
S2-19	Top AI Startups Hit Trillion-Dollar Valuations: OpenAI at \$852B, Anthropic at \$965B, xAI at \$200B	The Motley Fool	2026-08-11	US	AI & Machine Learning
S2-20	Anthropic Eyes \$6 Billion Decart Acquisition to Boost AI Chip Efficiency	Ctech	2026-08-13	Israel	AI & Machine Learning
S2-21	SpaceX to Finalize \$60 Billion All-Stock Acquisition of AI Coding Assistant Developer Anyosphere	SatNews	2026-08-13	US	AI & Machine Learning
S2-22	Pathos AI and AstraZeneca Partner to Advance ER+/HER2- Breast Cancer Therapy AZD4241 Using AI-Driven Platform	Fierce Biotech	2026-08-06	US	AI & Machine Learning
S2-23	Rethinking Endpoint Security in the AI Era: Enhancing Visibility and Resilience Against Shadow AI and AI-Powered Attacks	TrendAI (ES)	2026-08-10	Spain	AI & Machine Learning
S2-24	IIT Madras Spinoff Discovered Materials Raises \$9 Million Seed Funding to Tackle AI Chip Thermal Management with AI-Driven Material Discovery	Quantum Zeitgeist	2026-08-11	India	AI & Machine Learning
S2-25	AMD Acquires Taalas to Enhance Compute Solutions for Rapidly Growing AI Inference Market	Globe Newswire	2026-08-06	US	AI & Machine Learning
S2-26	Former Google Chief Scientist Jeff Dean's AI Startup Discovery Loop in Talks for \$10 Billion Funding at \$100 Billion Valuation	CryptoRank	2026-08-13	US	AI & Machine Learning
S2-27	Leading CRO Integrates AI Across Clinical Trial Operations to Enhance Site Selection, Feasibility, and Protocol Design, Providing Trial Intelligence	The Real Economy Blog	2026-08-06	US	AI & Machine Learning
S2-28	Pathos AI Licenses Global Rights for Experimental Triple-Negative Breast Cancer Therapy from Alhamab in \$2.2 Billion Deal	Bamboo Works	2026-08-13	China	AI & Machine Learning
S2-29	U.S. Health Insurers Offer AI Reality Check: Oscar Health Emphasizes Single Platform Advantage, Centene Demands Tangible Benefits	Endpoints News	2026-08-11	US	AI & Machine Learning
S2-30	Skan AI Raises \$63 Million to Enhance Platform for Observing and Modeling Employee Workflows, Launching New Enterprise AI Automation Products	VentureBeat	2026-08-12	US	AI & Machine Learning
S2-31	Novo Nordisk Partners with Amazon Web Services to Drive AI Drug Discovery	PharmExec	2026-08-10	US	AI & Machine Learning
S2-32	FriskAI Emerges from Stealth with \$3.6 Million Pre-Seed Funding for AI Agent Runtime Monitoring Platform	Dealroom.co	2026-08-11	Unknown	AI & Machine Learning

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S2-33	Hims & Hers Launches AI-Powered App, While Novo Nordisk Partners with H1 for AI-Driven Clinical Development	Fierce Healthcare	2026-08-07	US	AI & Machine Learning
S2-34	River AI Secures \$1.1 Billion in Funding Across Seed and Series A Rounds from NVIDIA, AMD, and Others to Develop Personal AI Stack	Menlo Times	2026-08-12	US	AI & Machine Learning
S2-35	Aisot Technologies Raises €2.13 Million Seed Extension for AI-Powered Portfolio Intelligence Platform Targeting Institutional Investors	Startupticker.ch	2026-08-14	Switzerland	AI & Machine Learning
S2-36	Situational Awareness Invests Additional \$400 Million in Chip Startup Source Foundry, Bringing Total to \$500 Million	CryptoRank	2026-08-09	US	AI & Machine Learning
S2-37	Aureka Biotechnologies Secures \$100 Million Series B to Accelerate AI Drug Discovery Biological Foundation Models, Nearing \$200 Million Total Funding	Under30CEO	2026-08-13	US	AI & Machine Learning
S2-38	Liquid AI Debuts LFM2.5-2.6B: A Powerful AI Agent Model Running on Raspberry Pi Without Cloud or GPUs	VentureBeat	2026-08-06	US	AI & Machine Learning
S2-39	Corma Raises \$60 Million Seed Funding to Build First Defensive Cybersecurity AI Foundation Model	Dealroom.co	2026-08-10	Unknown	AI & Machine Learning
S2-40	Challenges in Rapid AI Tool Development and Deployment in Clinics: Data Privacy, Algorithmic Bias, and Regulatory Delays	Facebook (STAT News)	2026-08-12	US	AI & Machine Learning
S2-41	CrystalO Biopharma Signs Collaboration and Licensing Deal with Almirall for AI-Driven Skin Disease Drug Discovery, Valued Up to €254.5 Million	Insight, China's Pharmaceutical Industry	2026-08-11	China	AI & Machine Learning
S2-42	UBS and FactSet Invest in Finster AI, HSBC in Model ML, Accelerating AI Adoption in Finance	TechCrunch	2026-08-14	US	AI & Machine Learning
S2-43	FDA Advances AI Medical Device Regulation Clarity Amidst "AI Premium" Driving Investment, Challenges Remain for Generative AI	Facebook (STAT News)	2026-08-11	US	AI & Machine Learning
S3-01	TUM Breakthrough: VECSELS Poised to Revolutionize Quantum Computing and the Quantum Internet	Presseportal	2026-08-06	Germany	Quantum Computing
S3-02	Zacks.com Publishes Detailed Earnings Estimates for Quantum Computing Inc. (QUBT)	Zacks.com	2026-08-07	US	Quantum Computing
S3-03	PsiQuantum Appoints Skype Co-Founder Niklas Zennström to Board of Directors	PsiQuantum	2026-08-11	US	Quantum Computing

ID	Title	Source	Date	Region	Sub-Topic
S3-04	Quantinuum's 48-Logical-Qubit Helios Quantum System Integrated into Oracle Cloud for Accelerated Hybrid Quantum-AI Workloads	Quantinuum	2026-08-11	US	Quantum Computing
S3-05	Google Cloud Unveils Roadmap for Full Post-Quantum Cryptography Migration by 2029, Mitigating "Store Now, Decrypt Later" Risks	Google Cloud Blog	2026-08-11	US	Quantum Computing
S3-06	President Trump Signs Executive Order 14413 to Accelerate Quantum Innovation, Bolstering Supply Chains and Launching QC-ADDS for Quantum Computing Development	McDonnell Boehnen Hulbert & Berghoff LLP	2026-08-14	US	Quantum Computing
S3-07	Illinois Establishes \$3 Million X-Labs Fast Fund to Attract NSF Quantum Teams, Bolstering Quantum Hub Status with \$200M State Investment	Illinois.gov	2026-08-07	US	Quantum Computing
S3-08	Oracle Integrates Hybrid Post-Quantum Key Exchange for TLS 1.3 in JDK 27, Extending PQC Support to Key LTS JDK Releases by 2027	Oracle Blogs	2026-08-06	US	Quantum Computing
S3-09	Palo Alto Networks Releases NIST-Aligned Post-Quantum Cryptography Migration Checklist, Emphasizing "Harvest Now, Decrypt Later" Risk Mitigation	Palo Alto Networks	2026-08-06	US	Quantum Computing
S3-10	Utah Launches Statewide Quantum Initiative to Accelerate Research and Commercialization, Governor Signs Executive Order	Governor Spencer J. Cox (Utah)	2026-08-10	US	Quantum Computing
S3-11	Pasqal Achieves World-First Atom Trapping with On-Chip Photonic Light, Paving Way for 10,000 Atom, 100 Logical Qubit Fault-Tolerant Systems	Pasqal	2026-08-10	France	Quantum Computing
S3-12	Quantum Advantage in Finance: ORIENTOM and Fondazione LINKS Collaborate on Derivatives and Portfolio Optimization PoCs	ORIENTOM	2026-08-13	Italy	Quantum Computing
S3-13	AOP Health Secures 'Quantum' Damages from PharmaEssentia in BESREMi® Arbitration, Confirming Significant Financial Liability	AOP Health	2026-08-07	Austria	Quantum Computing
S3-14	IonQ Reports Record Q2 2026 Revenue of \$80.1 Million, Up 287% YoY, and Completes SkyWater Acquisition for Vertically Integrated Quantum Platform	GlobeNewswire	2026-08-12	US	Quantum Computing

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S3-15	U.S. Congress Proposes 68% Increase in Military Quantum Funding to \$567 Million, Driving Federal Quantum Development Amid Global Competition	Quantum Zeitgeist	2026-08-11	US	Quantum Computing
S3-16	Fraunhofer IAF Reassesses Quantum Advantage with Realistic Benchmarks, Connecting Open Quantum Systems to Fault-Tolerant Algorithms	Mirage News	2026-08-13	Germany	Quantum Computing
S3-17	German Startup Saxon Q Unveils First Diamond-Based Quantum Computer Exceeding 10 Qubits at Room Temperature, Targets 512 Qubits Next Year	ENGtechnica	2026-08-06	Germany	Quantum Computing
S3-18	Quantagram Explains Surface Code as Key to Fault-Tolerant Quantum Computing, Highlighting Importance of Fast Classical Decoding	Quantagram	2026-08-13	US	Quantum Computing
S3-19	Rigetti Achieves 99.1% Two-Qubit Gate Fidelity on 108-Qubit System in Q2 2026, Reaffirms Roadmap to 1,000 Qubits	Rigetti Computing	2026-08-06	US	Quantum Computing
S3-20	Quantinuum Integrates Quantum Computing into Oracle Cloud Infrastructure, Accelerating Hybrid Workloads for Pharma and Finance	Quantinuum / Oracle	2026-08-11	US	Quantum Computing
S3-21	Quantinuum and Quanta Computer Partner for Next-Gen Hardware Infrastructure, Paving Way for Large-Scale Fault-Tolerant Quantum Computing	PR Newswire / Quantinuum	2026-08-14	USA / Taiwan	Quantum Computing
S3-22	Qunnect and Monarch Quantum Accelerate Commercialization of Deployable Quantum Networking Infrastructure, Targeting Defense and Space Applications	Monarch Quantum	2026-08-09	US	Quantum Computing
S3-23	Pasqal, a Leader in Neutral Atom Quantum Computing, to Go Public via SPAC at \$2 Billion Pre-Money Valuation	PR Newswire	2026-08-06	France	Quantum Computing
S3-24	Beijing-Based NK-Quantum Secures 100M CNY (~\$14.8M) Angel Round for Neutral Atom Quantum Computing and Simulation Systems	Dealroom News	2026-08-13	China	Quantum Computing
S3-25	Connecticut Secures Up To \$281M Public Funding for Quantum Hub, Expanding D-Wave's New Haven R&D; After \$550M Acquisition	Hartford Business	2026-08-10	US	Quantum Computing
S3-26	Quantum Computing Inc. Reports Q2 Revenue Surge to \$5.6M, Accelerates Fab 2 Launch via \$73.1M NHanced Acquisition for 3D Semiconductor & Nanophotonic Integration	Quantum Computing Report	2026-08-11	US	Quantum Computing

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S3-27	University of Waterloo Spinoff QuantumCore Secures Approximately C\$4.69M to Advance Superconducting Quantum Amplifiers and Single-Photon Detectors	University of Waterloo	2026-08-11	Canada	Quantum Computing
S3-28	SEALSQ and Quobly Secure \$5M Commercial Deal to Commercialize Post-Quantum Security Solutions for Quantum Computing Platforms	Quantum Zeitgeist	2026-08-14	Switzerl and	Quantum Computing
S3-29	Universal Digital Inc. Acquires Post-Quantum Cybersecurity Startup pQCee to Accelerate Development of Quantum-Resistant Cryptographic Solutions	Signalbase	2026-08-06	US	Quantum Computing
S3-30	UW-Madison Propels Quantum Innovation with Inflection's IPO and CHIPS Funding, QoLab's Superconducting Qubit Advances, and Dirac Labs' Quantum Sensors	In Business Madison	2026-08-11	US	Quantum Computing
S3-31	Governor Hochul Announces Launch of Selection Process for Regional Quantum Technology Commercialization Hubs with \$60M Funding in New York State	New York State Governor's Office	2026-08-12	US	Quantum Computing
S3-32	Inflection Reports Record Q2 Revenue of \$12.6M, Raises Full-Year 2026 Outlook to \$43M as Quantum Commercialization Accelerates	Business Wire / Inflection, Inc.	2026-08-12	US	Quantum Computing
S3-33	White House Bets on Government Demand to Accelerate Quantum Industry with New Executive Order and Pre-Market Commitments	GovCIO Media & Research	2026-08-07	US	Quantum Computing
S3-34	BTQ Technologies Signs MOU with KRW 8.9 Trillion Korean IT Group ITCENGLOBAL to Advance Post-Quantum Security Across Korea's Critical Infrastructure	PR Newswire	2026-08-13	South Korea	Quantum Computing
S3-35	QoreChain Initiates Production of Post-Quantum Cryptography on Live Blockchain Two Years After NIST Standardization, Leading Quantum-Safe Layer 1	U.Today	2026-08-13	US	Quantum Computing
S3-36	Quantum X Labs Reports Major Portfolio Shift to Quantum and AI, Acquires Quantum Israel for \$14.3M in Goodwill Amid Going Concern Warning	Stock Titan	2026-08-13	US	Quantum Computing
S3-37	IonQ Commits \$15M Over Five Years to Establish Quantum Communications Research Center in Chattanooga, Leading U.S. Quantum Computing Network Development	Times Free Press (via Facebook)	2026-08-08	US	Quantum Computing

ID	Title	Source	Date	Region	Sub-Topic
S3-38	STMicroelectronics Unveils ST54M, First PQC-Enabled Secure Element Integrating Hardware-Based Post-Quantum Cryptography for Automotive Applications	EE Times	2026-08-10	Switzerland	Quantum Computing
S3-39	DARPA Selects IonQ for Next-Generation Atomic Clock Production, Extending Contract by \$28M to Supply 125 Units to U.S. Government	IonQ	2026-08-06	US	Quantum Computing
S3-40	Google Cloud Unveils PQC Migration Roadmap, Setting 2027/2028 Completion Targets for Key Risk Areas to Complement 2029 Company-Wide Commitment	PostQuantum.com	2026-08-13	US	Quantum Computing
S3-41	IonQ Completes \$1.8B Acquisition of SkyWater Technology, Becoming the Only Vertically Integrated Full-Stack Quantum Computing Company	Value Add Pulse	2026-08-10	US	Quantum Computing
S4-01	Near-Packaged Optics Gains Momentum as Co-Packaged Optics Faces 2029 Mass Production Delays; Open CPX MSA Advances Interoperability	Tom's Hardware / XenoSpectrum	2026-08-13	US	Photonics & Optical Comms
S4-02	NVIDIA and Broadcom Dominate 2026 CPO Supply Chain; TSMC's COUPE Capacity Prioritized for AI Accelerators	SupplyICs	2026-08-07	US	Photonics & Optical Comms
S4-03	Photonics Becomes Geopolitical Flashpoint: US-China Summit May Address Optical Interconnects as US Considers Curbs on Chinese Hardware in AI Data Centers	Tom's Hardware	2026-08-12	US	Photonics & Optical Comms
S4-04	AI Data Centers Accelerate Shift from Copper to Optical Interconnects, Facing Co-Packaged Optics Bottlenecks	YouTube (Denver Stock Lab)	2026-08-11	US	Photonics & Optical Comms
S4-05	Coherent Unveils AI Optics Roadmap: Targeting 3.2T Transceivers and 6.4T CPO, Building on 800G/1.6T Core	Dr. Robert Castellano's Semiconductor Deep Dive Newsletter	2026-08-13	US	Photonics & Optical Comms
S4-06	Pasqal Develops Silicon Nitride Photonic Chips for Neutral Atom Quantum Processors, Targeting 10,000 Physical Atoms and 100 Logical Qubits	Quantum Computing Report	2026-08-13	US	Photonics & Optical Comms
S4-07	Shanghai Jiao Tong University Simplifies Photonic-Electronic Integration with Reconfigurable Germanium-Silicon Photodetectors Using FOWLP	Technology News Advanced Photonics Nexus (SPIE)	2026-08-06	China	Photonics & Optical Comms
S4-08	Lightmatter Releases White Paper Advocating Integrated Supply Chain for AI Photonic Interconnects	digitimes	2026-08-13	Taiwan	Photonics & Optical Comms

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S4-09	Hamamatsu Photonics' Advanced Detectors Drive CERN's Antimatter Research	浜松ホトニクス	2026-08-10	Japan	Photonics & Optical Comms
S4-10	PsiQuantum Secures \$125M DARPA Contract, Integrates NVIDIA CUDA-Q for Fault-Tolerant Quantum Software	PsiQuantum News	2026-08-11	US	Photonics & Optical Comms

Editor's Note

Navigating the AI-Quantum Convergence: Western Imperatives

The IT & Electronics domain is undergoing a profound transformation, driven by the relentless demands of AI and the emerging potential of quantum computing. This week's analysis reveals a landscape of unprecedented investment, rapid technological advancement, and critical supply chain vulnerabilities. Advanced packaging, particularly for AI accelerators and HBM, is at the forefront, with innovations like CoWoS achieving high yields but facing persistent bottlenecks in materials and capacity. Concurrently, AI's pervasive integration into enterprise operations is accelerating, alongside a complex and fragmenting global regulatory environment.

For Western manufacturers, investors, and executives, this convergence presents both immense opportunities and significant strategic risks. While US and EU governments are actively bolstering domestic capabilities through initiatives like the CHIPS Act and increased quantum funding, reliance on Asian supply chains for critical components like ABF substrates and advanced packaging remains a vulnerability. The geopolitical dimension of photonics, with the US considering curbs on Chinese hardware, underscores the need for resilient, localized supply ecosystems. Western players must leverage their strengths in R&D,, T&M,, and equipment innovation to secure a competitive edge.

To thrive in this dynamic environment, Western stakeholders must prioritize three strategic imperatives: First, aggressively invest in domestic advanced packaging and material production to mitigate supply chain risks and secure critical component access. Second, foster deep, collaborative partnerships across the value chain—from material suppliers to OEMs—to co-develop next-generation technologies and ensure supply resilience. Third, proactively engage with evolving global AI and quantum regulations, embedding ethical AI development and PQC migration into core strategy to maintain market access and trust. The future of IT & Electronics will be defined by those who can master this complex interplay of technological innovation, supply chain resilience, and regulatory foresight.

- ◆ How can Western OEMs and foundries accelerate domestic advanced packaging capacity to reduce reliance on Asian suppliers by 2028?
- ◆ What specific R&D; investments are required from Western material and equipment makers to address the emerging bottlenecks in ABF and glass substrates for AI chips?
- ◆ How should Western enterprises adapt their AI deployment strategies to navigate the rapidly fragmenting global regulatory landscape, particularly concerning data privacy and ethical AI use?

Troy Technical Weekly Editorial Team Editorial Assistant

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