

Week In Review: Manufacturing, Test – September 9, 2022

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*U.S. grants with strings; equipment billings up; packaging wafer concentration; Wi-Fi 7; sustainability.*  
SEPTEMBER 9TH, 2022 - BY: **KAREN HEYMAN**

Some funding details are now available for the CHIPS Act in the U.S. The Biden Administration plans to spend the money in the following ways:

- \$28 billion to establish domestic production of leading-edge logic and memory chips through grants, subsidized loans or loan guarantees;
- \$10 billion to increase production of current-generation semiconductors and chips, and
- \$11 billion for research and development.

But there are [strings attached](#). “Companies who receive CHIP funds can’t build leading-edge or advanced technology facilities in China for a period of 10 years,” said Gina Raimondo, U.S. secretary of commerce, at a White House briefing. “Companies who receive the money can only expand their mature node factories in China to serve the Chinese market.”

Meanwhile, Chinese foundries like **SMIC** have been [procuring lithography equipment](#) from the second-hand market.

And **Apple** has reportedly added China’s **YTMC** to its list of [NAND flash suppliers](#) for the iPhone 14.

**Skywater** plans to use a [\\$36.5 million grant](#) from the Department of Commerce to expand its advanced packaging facility in Florida.

Official negotiations on the [Indo-Pacific Economic Framework](#) (IPEF) kicked off in Los Angeles. The goal is to create a formal system for sharing semiconductor devices, medical products, and other vital supplies during international emergencies. “We are laser-focused on supply-chain resilience. We’re focused on ensuring bringing stability and resilience to our supply chains, especially in countries that are integral to producing and moving critical products,” a senior administration official said Wednesday. IPEF member countries include the U.S., Australia, Brunei, India, Indonesia, Japan, Malaysia, New Zealand, the Philippines, Singapore, South Korea, Thailand, Vietnam and Fiji.

DARPA (The Defense Advanced Research Projects Agency) announced the [DARPA Innovation Fellowship](#) for early career scientists and engineers. Fellows will work with DARPA program managers as well as university, industry, and non-profits conducting DARPA-funded research. The program is open to those within five years of receiving a doctorate, active-duty military with STEM degrees. In addition, DARPA may also consider exceptional bachelor- or master’s-level candidates with STEM degrees. U.S. citizenship is required.

The U.S. Department of Commerce and the Office of the U.S. Trade Representative launched the Indo-Pacific Economic Framework for Prosperity ([IPEF Upskilling Initiative](#)), a public-private endeavor aimed at providing digital skills to up to 7 million women and girls in emerging economies. Initial countries taking

part in the Initiative include Brunei, Fiji, India, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.

## Market research

Global semiconductor equipment [billings rose 7%](#) from the first to the second quarter of 2022 and 6% year-over-year to US\$26.43 billion, according to SEMI's new [Worldwide Semiconductor Equipment Market Statistics \(WWSEMS\) Report](#).

A [new report](#) from **Yole Group** report on Advanced Packaging, six players, including 2 IDMs (**Intel** and **Samsung**), a foundry (**TSMC**), and the top 3 global OSATs (**ASE**, **Amkor**, **JCET**), process more than 80% of advanced packaging wafers. OSATs accounted for 65% of the advanced packaging wafers in 2021. Foundries are taking advanced packaging business from OSATs with 14% and IDMs with 21%.

## Manufacturing

**Intel** and **Broadcom** showcased the industry's first cross-vendor [Wi-Fi 7 demonstration](#), with over-the-air speeds greater than 5 gigabits per second. The trial used an Intel Core processor-based laptop with a Wi-Fi 7 solution connected to a Broadcom Wi-Fi 7 access point.

**Renesas** introduced the industry's first [RISC-V MCU](#) specifically optimized for advanced motor control systems. "This RISC-V-based ASSP offers an optimum combination of low cost, quick time-to-market, and outstanding performance. It complements our current portfolio nicely, reaching out to new customers and emerging markets across the globe," said Roger Wendelken, senior vice president in Renesas' IoT and Infrastructure Business Unit.

## Equipment and materials

**Techcet** reports the [demand for high-purity silicon parts](#) for semiconductor manufacturing equipment will remain strong for the rest of the year. The silicon parts market is expected to top US \$900 million, a 10% increase from US \$824 million in 2021. The firm forecasts the 2021 to 2026 CAGR for this market to increase almost 6%.

[Hemlock Semiconductor Corporation](#), the largest producer of polysilicon in the United States, has announced a \$375 million investment leading to the creation of an estimated 170 jobs in Thomas Township, Michigan.

**EV Group** is working with Taiwan's Industrial Technology Research Institute (**ITRI**) to create a [chiplet ecosystem](#) that includes package design, testing, verification, and pilot production.

**Park Systems** [acquired Accurion GmbH](#), a privately held company that develops and manufactures imaging spectroscopic ellipsometers and active vibration isolations. This acquisition adds to Park's portfolio of atomic force microscopy and white-light interferometric microscopy.

**TEL** released its [sustainability report](#) for 2022, highlighting global initiatives implemented throughout its business operations and manufacturing facilities.

## Further reading

Check out the new [Test, Measurement & Analytics](#) and [Manufacturing, Packaging & Materials](#) newsletters. Among the top stories:

- [Making 5G More Reliable](#)
- [Enabling Test Strategies For 2.5D, 3D Stacked ICs](#)
- [The Drive Toward More Predictive Maintenance.](#)
- [Big Changes In Architectures, Transistors, Materials.](#)

## Upcoming [events](#):

- AI Hardware/Edge AI Summit, Sept. 13 – 15 (Santa Clara, CA)
- Semicon Taiwan, Sept. 14 – 16 (Taipei, Taiwan)
- SPIE Photonics Industry Summit, Sept. 21 (Washington, D.C.)
- SPIE Photomask Technology/Extreme Ultraviolet Lithography, Sept. 25 – 29 (Monterey, CA)
- International Test Conference, Sept. 25 – 30 (Anaheim, CA)
- 55th International Symposium on Microelectronics, Oct. 3 – 6 (Boston, MA)
- Semicon China, Oct. 5-7 (Shanghai, China)

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