Intel shipping 10nm Ice Lake processors

DIGITIMES staff

Intel has disclosed it is shipping its 10th Gen Core processors, code-named "Ice Lake," based on 10nm.

The revelation was made as Gregory Bryant, Intel senior vice president and general manager of the Client Computing Group, delivered his keynote at Computex, during which the company also disclosed new details on the company's Project Athena.

"No one wants to compromise; people want it all: battery life, performance, responsiveness, connectivity and slick form factors. Our job is to come together as an industry and deliver incredible and differentiated PCs, purpose built to what real people want. 10th Gen Intel Core processors - our most integrated CPU - and Project Athena are great examples of how our deep investments at a platform level will help fuel innovation across the industry," said Bryant.

10th Gen Intel Core processors

Intel said its first 10th Gen Intel Core processors bring high-performance AI to the PC at scale with Intel Deep Learning Boost (Intel DL Boost). The processors are built on the company's 10nm process technology, new "Sunny Cove" core architecture and new Gen11 graphics engine.

The 10th Gen Intel Core

Intel 10th Gen Core processors, code-named "Ice Lake," based on 10nm

processors will range from Intel Core i3 to Intel Core i7, with up to four cores and eight threads, up to 4.1 max turbo frequency and up to 1.1 GHz graphics frequency.

Intel said the 10th Gen Intel Core processors will take thin-and-light notebooks and 2-in-1s to the next level, offering:

• **Intelligent performance**

Intel's first processors designed to enable high-performance AI on the notebook, delivering approximately 2.5x AI performance with Intel DL Boost for low latency workloads. The new graphics architecture delivers up to one teraflop of vector compute for heavy duty inference workloads to enhance creativity, productivity and entertainment on highly mobile, thin-and-light laptops. For low-power AI usages on the PC, Intel Gaussian Network Accelerator (GNA) is built into the SoC.

• **Graphics capabilities**

New Intel Iris Plus graphics, based on the Gen11 graphics architecture, nearly doubles performance for visual experiences: Pro-level content creation capabilities on the go with approximately 2x HEVC encode; 4K HDR in a billion colors; up to 2x faster FPS; and thousands of popular titles in 1080p.

• **Connectivity**

They deliver both integrated Thunderbolt 3 and integrated Intel Wi-Fi 6 (Gig+) for the first time to enable nearly 3x faster wireless speeds alongside the fastest and most versatile port available. Intel's Gig+ implementation of Wi-Fi 6 connectivity delivers greater than 1 Gbps wireless speeds with enhanced reliability and performance.

Intel said its highly integrated 10th Gen Intel Core processors

give OEM partners the freedom to innovate on design and aesthetic by reducing the silicon footprint while still delivering the latest and greatest standards and world-class performance. The new 10th Gen Intel Core processors are now shipping, with OEM systems expected to be available for the holiday season in 2019.

Intel also showcased at Computex how its products and technologies spanning hardware and software innovation, new prototype notebooks, AI, ambient computing, modular computing and others.

Notebook innovation

Intel demonstrated a new form factor concept (code-named "Honeycomb Glacier") to enable new experiences for gamers and creators. The Honeycomb Glacier concept features an integrated companion display for more screen real estate to game and create, all in a notebook. The design powers more immersive gaming experiences by making key information persistent on the companion screen to access things like level maps, inventories and status.

Intel is collaborating with OEMs to bring to market companion display systems based on this visionary concept and powered by the latest 9th Gen Intel Core mobile processors, with the

first being the Asus ZenBook Pro Duo with ScreenPad Plus.

Ambient compute concept PC

Intel is enabling a computing experience that will be increasingly immersive, connected and intelligent. It demonstrated its ambient PC prototype (code-named "Mohawk River") to show how the notebook can be always ready and proactively adapting to users.

The notebook can anticipate user needs and commands by leveraging human presence sensors, 180-degree cameras, exterior secondary displays and Intel local voice ID. It can connect with people using closed-lid intelligence, allowing for seamless transition from open lid to closed lid and back again. It can continue working efficiently, getting relevant information and staying connected even with the lid closed when in transition.

AI on PC development kit

Software, development tools, operating systems and hardware are all undergoing rapid changes to take advantage of deep learning technologies and other modern AI techniques. AI will also change the way people interact with and use their PCs. Intel announced a collaboration with Microsoft and Asus to launch the world's first AI on PC development kit.

SECO embracing smart edge systems and accelerating business expansion in Asia

Sponsored content

There is increasing demand for more local, edge-based processing in systems to complement cloud based functions. And we are in the early days of 5G Network deployment. A variety of applications including media streaming devices, surveillance cameras, smart sensor hubs and the solutions can benefit from a combination of edge, cloud processing leveraging artificial intelligence (AI) technology.

The embedded systems and industrial PC industries are looking at various vertical solutions and technologies with different kinds of CPU, APU or SoC from primarily being designed for machine control applications to very broader range of fields such as smart healthcare or industrial Internet of Things (IIoT) systems. These smart edge technologies make the embedded systems transforming themselves into really complex systems, thus creating newer opportunities and challenges to develop more powerful, energy efficient systems and other AI enabled micro servers.

Founded in 1979, SECO is an Italy based embedded system and leading industrial solution provider with dedicated focus on designing standard solutions up to custom embedded systems fulfilling the needs of customers. The product portfolio is ranging from board-level controllers with firmware, software stacks to a complete system. Now the coming smart edge systems, SECO is releasing an entire product roadmap in Computex 2019.

Marty Chen, vice president of SECO Asia Pacific, talks about how the trends of smart edge technology boosting SECO product offerings to develop Asian market to expand the further growth of embedded system sectors.

Flexible hardware platforms shortening time-to-market for system integrators

The computer on module (COM) is one of the most popular product series of SECO. It equips the cross-platform philosophy with the modular design aiming to provide flexibility to switch different CPUs between X86, ARM and FPGA-based architectures with the same form factor standards. Customers could change the CPU chips from x86 to Arm-cored processor or FPGA solutions, or changing different grade of CPU cored chips. The unique benefits are giving the freedom to switch CPUs to satisfy the versatile applications with intensive computing requirements in various embedded systems, which gaining both extreme flexibility and vast scalability as well. And the most of all, solution providers save the hardware development efforts and have a major focus on tackling the major technical challenges of AI software integration the solving issues of time-to-market considerations.

The processor support is the key to a successful business for SECO. To strengthen its leadership strategy in AI enabled embedded solutions based on Arm-based architectures, SECO is releasing an entire product roadmap on standard and custom form factors leveraging NXP i.MX 8 Family, which ranges from the ultra-low-power (i.MX 8M Mini) to the best in class models, such as i.MX 8 Quad Max APU chip. The full line COM products provide high performance, low power, high reliability product features to fulfill the needs of critical applications such as automotive and industrial automation. In recent business development of European market, SECO has successfully introduced various medical solutions covering the computation modules of ultrasound equipment to complete healthcare tablets.

Adapting COM-HPC new standards for supporting high-end server class CPUs

Traditionally SECO develops the entire Intel, AMD, NXP roadmaps in all standard modular form factors including Qseven, COM Express and SMARC standards. But there is new demand for high computing performance at the edge. Today, the unstoppable data growth generated from sensors of edge devices is a megatrend. The high data transfer rates of the upcoming 5G standard and the data hunger of the AI algorithm need a new generation of embedded systems with the latest high-end server class CPUs and support 100 Gigabit Ethernet, PCI express Gen 4/5, USB 3.2 etc. The existing COM Express Type 7 is no longer sufficient to manage those high speed data busses also due to the physical limits of the connectors, for this reason SECO is promoting a new initiative in the PICMG for the foundation of a new modular standard, named COM-HPC. This new modular standard will be available in two different form factors both adopting two new high-speed connectors with a total of 800 pins, to guarantee the signal integrity of those high speed busses as PCI express Gen 4/5 up to 64 lanes.

With new initiated COM-HPC specification, SECO is kicking off the new projects for a new series of smart gateway systems based on NXP Layerscape processors. This new standard will target, for example, the industrial automation use cases as the factory floor where it is necessary a proximity rugged server that has to work in harsh environmental conditions and in general in the critical infrastructures where the classic IT servers cannot be considered reliable, Chen highlighted.

The trends of AI, IIoT and Edge Computing technologies will continue bringing the smart solutions to improve the quality of human life. With the advent of IIoT and Smart Edge technologies, system integrators need to be prepared for the prospects which will be opened by these new edge systems as well as the big business opportunities such as retail, industrial automation, medical, communication etc. Chen added, "SECO

Marty Chen, vice president of SECO Asia Pacific

is ready, and we will help customers to be ready for the success in the rapid growth market."

Meanwhile, during Computex Taipei 2019, SECO will showcase a full range of products at Nangang Exhibition Hall, booth No K01015. The product demonstration will include a full range of products of Qseven, COM Express and SMARC product lines to allow visitors to have a good chance to see the advanced solutions provided by a leading European embedded solution vendor.

For entering Asia, Chen added, the current development will continue towards smart medical solutions. Over the past few years, SECO taking time to build the partnership with targeted first-tier customers in Japan and South Korea; it will gain the benefits of sales performance in next few months. And it is further expanding its operations to China at a rapid pace, Chen noted.

Clientron to introduce brand new POS system, self-service kiosk and IoV intelligent in-vehicle driving solution

Press release

Clientron Corp, a global leading provider of thin client, POS , automotive electronics and embedded systems, is demonstrating its new product innovations at Computex 2019. The highlights of products include the latest POS terminals and self-service kiosk for the retail and hospitality industries and Industrial panel PC with IP69K protection to against high temperature, dust and water.

In addition, Clientron debuts the brand new IoV intelligent in-vehicle

driving solution, which refers to the intelligent driving center console as the core system, and functionality is fully integrated with the in-vehicle infotainment system, the digital driving instrument display, the digital console control, the advanced driver-assistance systems (ADAS), augmented reality display (ARD) and IoV interactive functions. It shows the innovative technology and system integration capabilities of the tier-1 professional automotives electronics supplier. The complete product series of Clientron are on exhibition at booth R0827 in TWTC Nangang Exhibition Hall 2.

Smart retail solution: Self-ordering kiosk and multi-function POS terminal
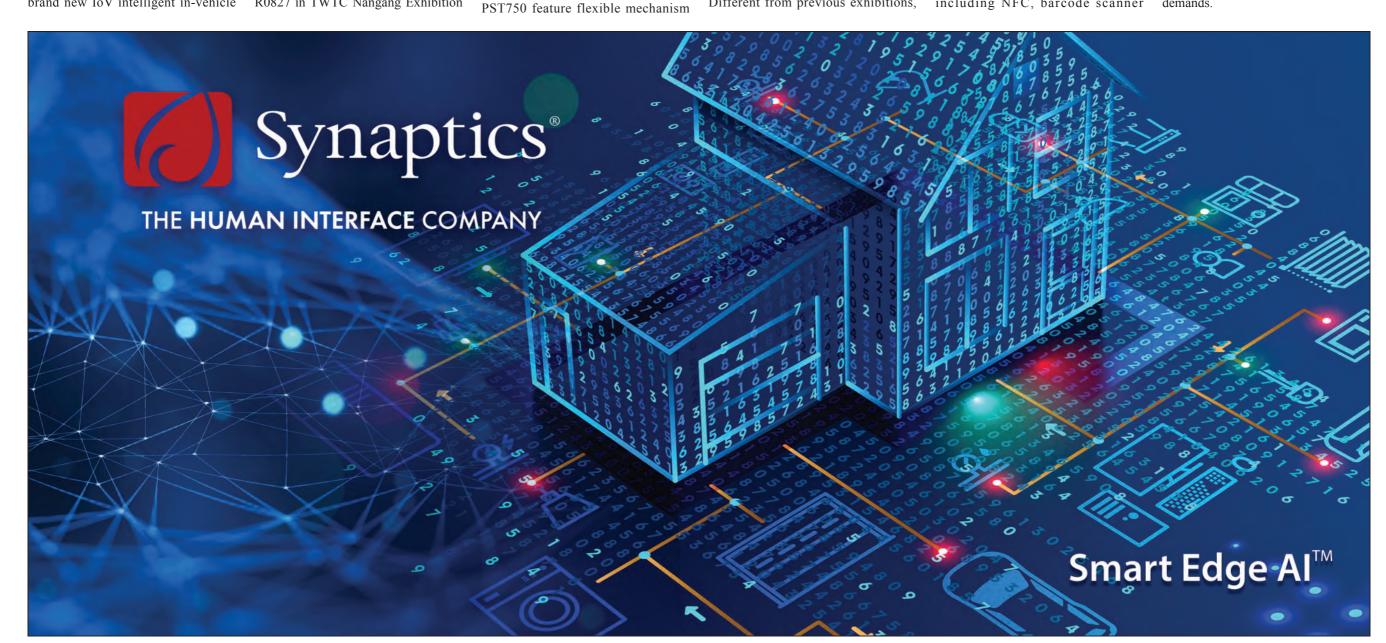
At the show, Clientron introduces its entire POS product portfolio, including multi-function all-in-one POS terminal PSL540, which integrates thermal printer and peripherals with a compact and low-profile enclosure for small stores and price checking machines. Another tower-type all-in-one POS terminal PST650 and high-performance PST750 feature flexible mechanism

design, supporting a number of well-known printer brands, such as Seiko and Epson. The PST series features printer foot stand with lightweight design, saving counter space, especially suitable for catering services and more smart retail applications. Another focus on the show is PT2000 series POS terminal, offering from entry-level to high-end Intel Core i platform with fanless design, aiming at mainstream product segment with valuable cost-effective benefits and multiple peripheral solutions to enhance user experience. Different from previous exhibitions,

Clientron displays the self-service kiosk, featuring a 32-inch multi-touch display and supporting a variety of payment mechanisms, and peripherals including NFC, barcode scanner

and receipt printer for self-ordering kiosk applications. Designed with flexible I/O expansion, it can provide customized services according to demands.

Motion's role in the truly autonomous home

Press release

Right now, consumers use the term "smart home" to describe Internet of Things (IoT) devices that are designed to automate various household tasks. However, having a home full of smart devices that all operate independently and based on preferences that were set manually does not constitute a truly smart home. Cognitive Systems' vision of a smart home is where an IoT device takes action based on the consumer's presence, not what it has been programmed to do. By their very nature, IoT devices require Internet connectivity to function.

WiFi Motion

As humans, we don't often think about every little movement that's required to keep ourselves comfortable in our homes. But the truth is, nearly every home-related task requires some sort of physical motion: turning on the lights, locking or unlocking the door.

Imagine if, just by walking in the door, your WiFi-enabled devices could come alive. Your door would lock automatically behind you, your thermostat would set to your ideal temperature, and your favorite lamps would light up in the room you're in – all without having to set any preferences through an app or the devices yourself.

This automation is made possible through artificial intelligence.

Why is WiFi Motion home automation necessary?

Because humans are so accustomed to consciously or unconsciously making decisions all day, we don't even realize how much time is actually spent on routine actions. With true home automation, we will have more time and headspace than ever before. Through Cognitive Systems' advanced algorithmic processes and localization technology, this futuristic vision of a truly smart home is within sight.

Less than a quarter of Taiwan monitor shipments to be impacted by US tariff hike

Betty Shyu, DIGITIMES Research

Some of Taiwan's monitor makers have begun looking for suitable production sites outside of China, as they brace for the 25% tariffs on Chinese goods. But only around 23% of Taiwan's monitor shipments are expected to be impacted by the tax.

Since monitor's assembly process is much simpler compared to those of other complicated IT devices such as notebooks, desktops and smartphones, finding replacement facilities and labor outside of China will not be a difficult job for most makers. Therefore Digitimes Research expects the PC monitor industry to see limited impact.

To minimize the impact from the tariff, most monitor brands pulled in extra shipments in the first quarter of 2019 to increase their inventory levels and have continued doing so during the second quarter, which should boost worldwide monitor shipments by 10% on year in the quarter, higher than originally expected 2%.

Monitor vendors are also closely watching related developments, such as the depreciation of Chinese yuan. Most vendors are now accepting transactions only in US dollar.

The US government is looking to hold a public hearing for the tariff on June 17,

which means the levy policy may be okayed as early as June 24. With 3-4 weeks of preparation time, the tariff may officially be implemented at the end of July, giving vendors around two months of time to prepare for the extra tax.

The largest PC monitor maker worldwide TPV currently has production sites in China's Fuqing, Chengdu and Beijing with the one in Fuqing being the largest. Of TPV's monitor shipments, only around 18% are shipped to the US, the lowest of all Taiwan-based players. TPV's own-brand shipments, which primarily go to China and Europe, account for around 40% of its overall volumes.

TPV's plants in Chengdu and Beijing are mainly supplying monitors to vendors in China including China Electronics (CEC) and China Greatwall Technology Group.

But TPV's monitor shipments to the US are still the highest of all Taiwan-based players, reaching around eight million units a year. To minimize tariff impact, TPV has rented production lines in Bangkok, Thailand from local maker Orion since April 2019 in order to quickly start mass production. But it is unlikely to be a long-term solution.

The second largest monitor maker worldwide Qisda is currently shifting production lines from China to Taiwan,

Southeast Asia and the US. Moving to Taiwan is the priority for Qisda at the moment, while the maker so far has already found 1-2 production partners in the US.

Taiwan is currently the second best place for monitor production in terms of supply chain support, behind only China. Qisda is currently preparing its factory in Taoyuan, Taiwan for mass production and is negotiating with the local government over support, including manpower. The facility is expected to begin operation in 2-3 months.

Qisda already began talking to clients about the possibility of US-China trade tensions two years ago, and has already notified them about the increasing costs and expenses sharing.

Foxconn Electronics (Hon Hai Precision Industry) and Wistron only have about 30% of their monitor shipments that will be affected by the tariff hike. Since these shipments only contribute very limited revenues, the two makers so far have not yet made plans about moving production lines out of China. But still, the two companies are expected to shift related production out of China in the future by adjusting their worldwide capacity allocations.

Digitimes Research has learned that HP and Dell are providing their partners 15-20% of subsidies for six months on monitor products affected by tariff hike.

StorArt Technology announces the release of NVMe SSD controller with PCIe interface solution

Press release

StorArt Technology, a leading NAND flash controller solution provider, announced the launch of its NVMe-1.3 SSD controller, SA3811, with PCIe3.0x4 lanes providing 4GB/s interface, high-bandwidth, IOPS and low-latency performance.

The SA3811 is the best solution for client SSD applications, like PC/ultra-book, consumer electronics, IPC, hyperscale datacenter and other markets. It also adopts StorArt's new LDPC technology for

reliability enhancement, and endurance boost. By leveraging StorArt flash management technology, excellent sequential/random read/write performance and good lifetime extension for SSD applications.

SA3801 is a popular G3x2 PCIe SSD controller in mass production providing an excellent and extremely competitive total BOM cost to our customers. Good value doesn't lower its performance for either external or embedded applications which the users can enjoy the best cost versus performance value with SA3801.

StorArt Technology SA3811

Gigabyte releases high-performing New AERO notebooks

Press release

Gigabyte has released at Computex the New AERO series – the company's newest high performance notebooks that feature powerful performance, precise color, brilliant 4K OLED displays, and user-friendliness. Targeting content creators who are always racing against time, the devices offer to be mobile studios that provide everything they need in whatever creation scenarios.

The New AERO 15 OLED comes with the Pantone-calibrated AMOLED HDR display while the New AERO 17 comes with 4K HDR display; both deliver high color contrast. Each device is equipped with an Nvidia GeForce RTXTM 20 / GTX 16 graphics card and a super powerful 9th-generation 8-core Intel CoreTM i9-9980HK /6-core i7-9750H processor, while the two turbine fans dissipate heat more effectively than notebooks of the same class or even higher-end models, running professional video editing software Premiere Pro 20%-40% faster.

The OLED panel of the New AERO 15 OLED is capable of outputting 100% of the DCI-P3 gamut and a contrast ratio of 100,000:1. Gigabyte makes sure that the display of every single notebook is factory-calibrated to X-Rite Pantone certified procedure for color accuracy.

Gigabyte takes an "All Intel" Inside approach – using key components supplied by Intel – and has included Microsoft Azure AI in its machines to intelligently control CPU and GPU resources according to computer programs' needs. At a weight of 2.1 KG and with an 3mm bezel, this series is a balance of ultra-thin, efficient, and precuse color.

JC Lin, a professional content creator and an experienced Hollywood effect technical director who participated in the production of the famous drama series Game of Thrones, had first-hand experience with visual effects production on the New AERO. He was impressed with the best-in-class, efficient computing and smooth user experience, running the commonly-used VFX solver Eddy with performance 2 to 3 times better than other devices popular with content creators.

The 5G era

From CES to MWC, 5G technologies have shone in recent international technology events and are highly relevant to critical applications of high-profile technologies such as AR/VR and AI. As the era of 5G arrives, the industry of high-resolution content will see even more exponential growth.

Supported by extremely-high-speed connection, content creators will be able to increase their productivity through real-time collaboration and cloud-terminal integration of resources. Meanwhile, increasingly refined digital content of higher resolution requires computing power for the more complex renderings of light and shadow as well as dynamic images of high frame rates. That is to say, for editing, rendering, and file conversion, content creators will need a more powerful device to produce works of higher specifications and larger file sizes in order to meet their audience's demand.

As chairman of Gigabyte Technology, Dandy Yeh, said, "The drive for innovation in our products and services has always been human-centered: bringing the best experience to people while attending to practical needs that constantly evolve with time. In the 5G era, with the emergence of self-media, social media and the renovation of Internet infrastructure, content creators face great opportunities and whole new challenges. With AERO 15 OLED, Gigabyte redefines the future laptop market by creating laptops that best fit into creators' useage scenarios and supports our users in becoming brilliant creators with the assistance of powerful and high-quality devices.

By doing so, we bring more possibilities to individual achievements as well as rapid growth for the content industry in general. We will expand the AERO line to provide content creators with even more unique and excellent user experience powered by top-notch Intel Core i9 processors. Meanwhile, our gaming laptops AORUS will uphold its commitment to better gaming grunt, offering optimum performance, fast-ever visuals, and superb keyboard experience. "

Pantone-calibrated OLED display

With user scenarios of content creation in mind, the New AERO has four major advantages that highlight its ingenious hardware specifications, design and build, and software integration. The robust CNC-fabricated chassis underpins a more solid build.

Even the 15-inch model includes a number pad, while the wide array of ports and the superfast 300MB/S UHS-II SD card reader allow users to transfer and immediately show their large-sized digital works on the AERO 15 OLED screen.

Phison announces the era of PCIe 4.0 solutions

Press release

One of the major themes of Computex this year is "Gaming" and the introduction of PCIe 4.0 is generating a lot of excitement. Phison Electronics, the world-wide leader in SSD storage, proudly announces the arrival of the first PCIe 4.0 SSD. The PS5016-E16 is fully aligned with AMD X570 chipset motherboards. The improved performance and reduced latencies of PCIe 4.0 enabled solution will bring enhanced realism to the gaming world.

"3rd Gen AMD Ryzen Desktop Processors and AMD X570 motherboards for socket AM4 create the world's first PC platform to support PCIe 4.0 connectivity," said Chris Kilburn, corporate vice president and general manager, Client Channel, AMD.

"We are delighted to be working with Phison to lead the ecosystem of advanced PCIe 4.0 technologies."

KS Pua, Chairman and CEO of Phison, said "Working with AMD has enabled rapid innovation and expansion of the PCIe 4.0 ecosystem. The PS5016-E16 is the world's first Gen4x4 NVMe SSD controller IC. When combined with AMD X570 motherboards, this storage solution is ready to meet the high bandwidth requirement of 8K HD gaming."

PS5016-E16 controller IC is Phison's latest flagship SSD solution and the only PCIe Gen4x4 NVMe SSD controller chip in the consumer application market. Based on the 28nm process node and using Phison's fourth-generation LDPC ECC engine, the Phison PS5016-E16 controller IC can push flash memory to new levels. It is expected to start sampling and begin mass production in the coming third quarter.

The motherboards that participate in and support AMD's first wave of PCIe 4.0 ecosystem include ASRock X570 Taichi and X570 Phantom Gaming X MB products, Corsair Force series MP600 Gen4 PCIe x4 NVMe M.2 SSD, Gigabyte X570 Aorus Xtreme and Master series MB products and Aorus NVMe Gen4 M.2 SSD series products, Galax HOF Pro PCIe M.2 SSD products, and MSI X570 series MB products, which are expected to bring a wave of heated discussions in Computex. Phison will also continue to work closely with AMD and motherboard manufacturers and branded SSD partners to promote PCIe 4.0 applications and drive next-generation storage solutions.

Phison announces the era of PCIe 4.0 solutions