the next generation of IoT edge devices
More CPU power for low power devices

Intel Atom E38xx @ 1.91GHz		509
Intel Atom x5-E8000 @ 1.04GHz		535
Intel Atom E39xx @ 1.60GHz		758
Intel Atom x62xxE @ 1.20GHz		1,304

22nm

14nm

14nm

10nm   Performance
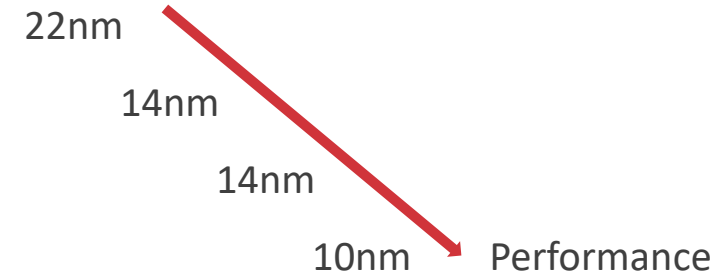
Featuring the latest *Intel Atom*® x6000E Series and Intel® Pentium® and Celeron® N and J Elkhart Lake) processor generation, Adlink SMARC

modules offer more CPU power for low-power applications.

The new low-power Intel Atom processors offer a significant performance boost

of up to 70 % single thread performance over previous Atom series based on the

Apollo Lake microarchitecture

intel. ATOM

	170 %	160 %	200 %	200 %	200 %
Single Thread Performance	PCIe Bandwidth	Grafics Performance	USB Bandwidth	RAM Size

▮ Intel Atom E39xxx (Apollo Lake)   ▮ Intel Atom X6000e (Elkhart Lake)
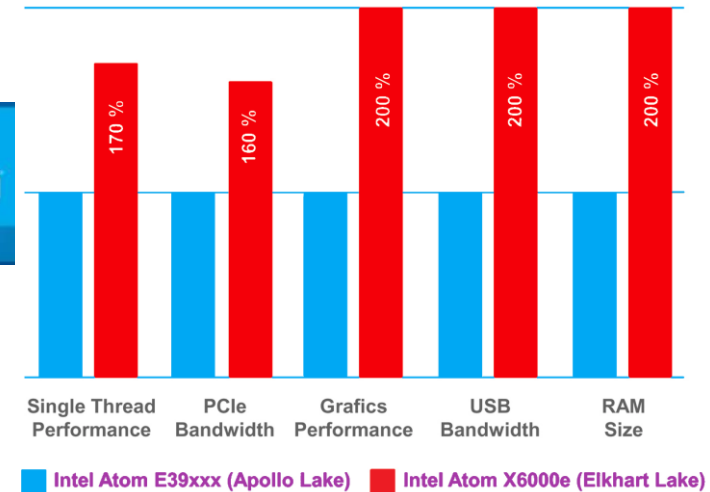
What AIoT applications need today is a low-power, high-performance processor technology, real-time operation, real-time connectivity, and real-time hypervisor technologies.

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New *Intel Atom® x6000E Series and Intel® Pentium® and Celeron® N and J Series processors* (code named Elkhart Lake)

Increased graphics speed

The new Adlink CoM's based on the *Intel Atom® x6000E Series and Intel® Pentium® and Celeron® N and J Series processors* (code named Elkhart Lake) silicon offer impressive graphics with twice the speed for up to 3x 4k @ 60fps and 10-bit color depth.

This increase in graphics performance is made by integrating the Intel® 11th generation graphics Intel® Core™ unit, which had already been built into the Intel® 10th generation Core ™ processors (code name Ice Lake).

The GPU is located on the CPU die and benefits from the optimizations of the 10nm manufacturing technology.

The performance increase comes from the number of integrated Execution Units (EUs), of which are up to 32 units.

The graphics performance is therefore doubled simply because of the higher efficiency and increased number of EUs
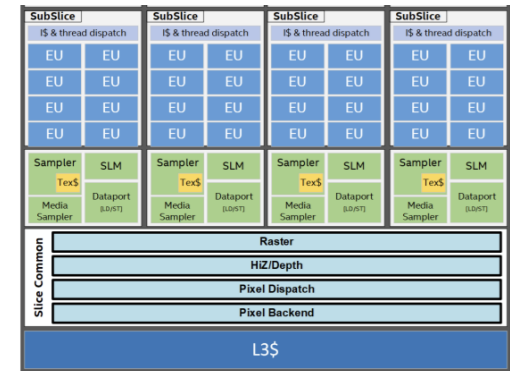
the next generation of IoT edge devices

New *Intel Atom®* x6000E Series and Intel® Pentium® and Celeron® N and J Series *processors* (code named Elkhart Lake)

Realtime via 2.5G Ethernet

In industrial real-time applications, based on VxWorks and real-time Linux, are using *Intel*® Time Coordinated Computing (*Intel*® TCC) / *Intel*® Time-Sensitive Networking (*Intel*® TSN), and RTS (Real-TimeSystems) hypervisor support.

Intel® Time-Sensitive Networking (*Intel*® TSN), enables time sensitive applications over IP in hard real-time.

Adlink's new Atom processor-based modules offer integrated MACs that support TSN over 2.5 GbE. with real-time control.

Customers who want to integrate *Intel*® Time-Sensitive Networking (*Intel*® TSN), into their applications can therefore benefit directly from the application-ready solutions already available.

Intel® Time Coordinated Computing (*Intel*® TCC) orchestrates real-time Intel IP based communication also towards the I/O's to

reduce latency and minimize jitter in synchronous processes. It can be adjusted via the *Intel*® Time Coordinated Computing (*Intel*® TCC) Software Toolkit. This can be useful for real-time applications in the transportation sector

where the processor-integrated CAN bus needs to be integrated.

the next generation of IoT edge devices

New *Intel Atom® x6000E Series and Intel® Pentium® and Celeron® N and J Series processors* (code named Elkhart Lake)

Higher data throughput

Higher data throughput to peripherals will also be a key benefit of the new Intel® Core ™ processors.

PCIe Gen3 is now available in a low-power processors, which means that the data rate has nearly doubled to a maximum of 32 Gigabyte/s compared to PCIe Gen2 as supported by Apollo Lake.

Another new feature is USB 3.1 Gen2 support, which offers a significant performance increase compared to USB 3.1 Gen1.
At up to 10 GBit, this enables twice as fast data transfers compared to USB 3.1 Gen1, opening the doors for uncompressed UHD video over USB
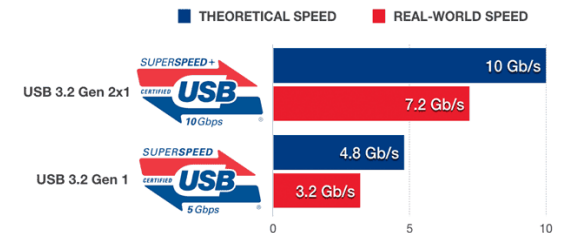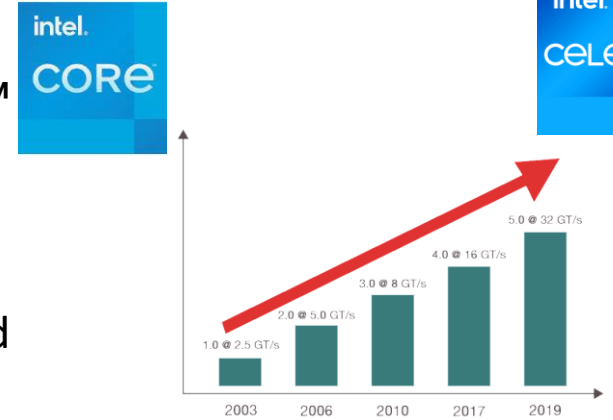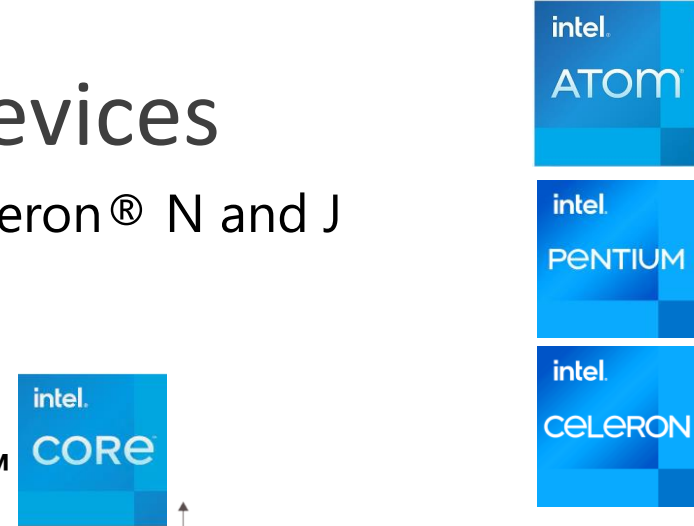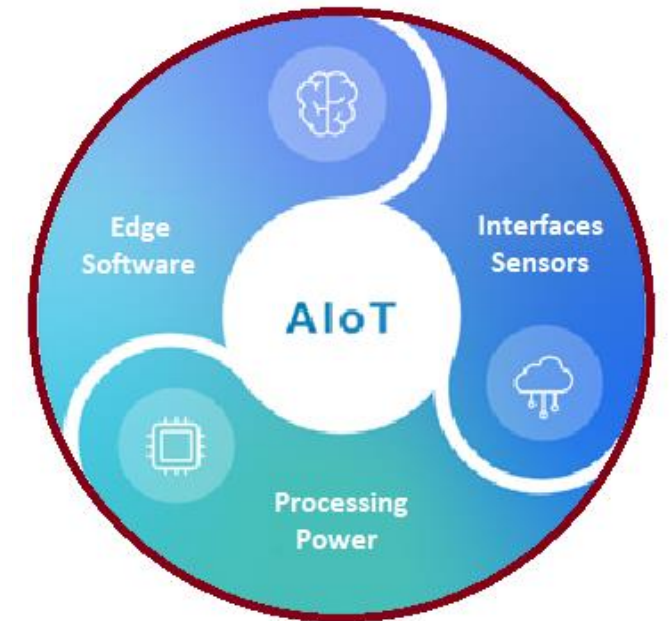
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More CPU power at the Edge

With ever increasing demand for processing power combined with a rich interface set the new New *Intel Atom® x6000E* Series and Intel® Pentium® and Celeron® N and J Series *processors* (code named Elkhart Lake)

Embedded processors are the perfect match for edge located devices that demands besides robust processing power a very low energy footprint

What AIoT applications need is a low-power, high-performance processor technology, real-time operation, real-time connectivity, and real-time hypervisor technologies.

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Development kits

- SMARC rev. 2.1 compliant
- LEC-EL6413-4G-32G-CT SoM
- Dual RJ45 ethernet
- 2x USB 3.1, 2x USB2.0
- HDMI 2.0a / dual LVDS
- 40 pin RPI compatible expansion header
- 40 pin additional expansion header
- 2x M.2 expansion slots
- Micro SD card reader, SIM card reader
- HDA Audio interface board
- Low profile heat-sink
- 19vDC power adapter US/EU plug

I-Pi SMARC Elkhart Lake

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Get your development kit now!

- Online sales
- Online documentation
- Online support
- Online carrier designer (coming soon)

- Online R2R system images

I-Pi SMARC Elkhart Lake

Get yours @ www.ipi.wiki

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Development kit Software

Main supported OS's on IPI.WIKI

- Ubuntu 22.04 LTS   Runtime image ✅   Sourcecode ❌

- Celadon Android 10 x86   Runtime image ✅   Sourcecode ✅

- Yocto Project Hardknott   Runtime image ✅   Sourcecode ✅

- Microsoft Windows 10   Runtime image ❌   Sourcecode ❌
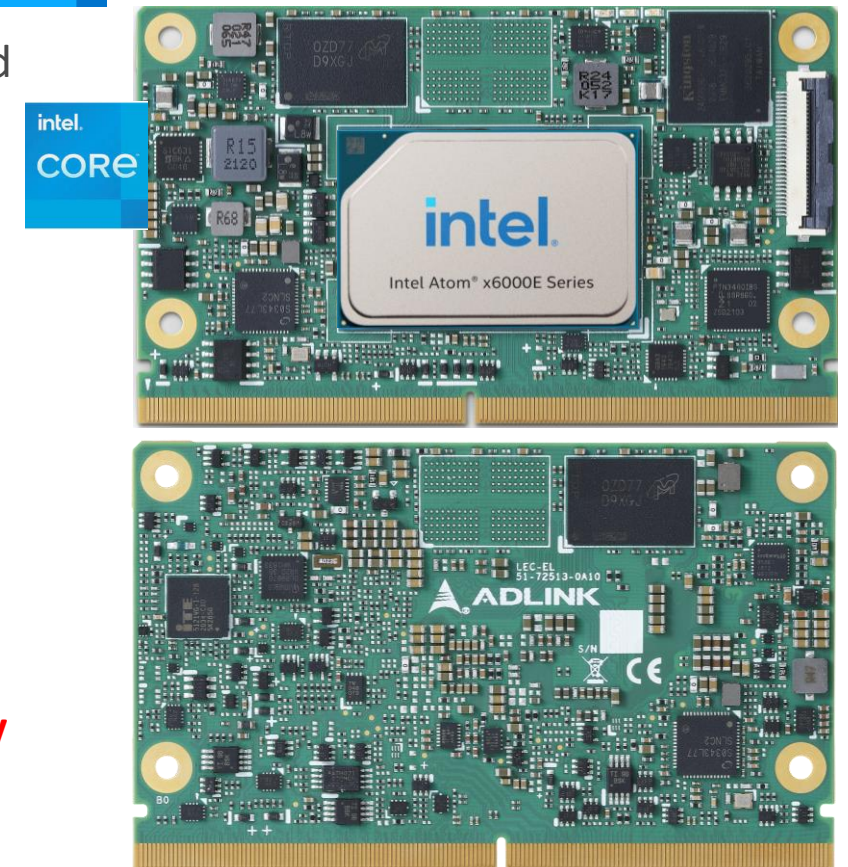
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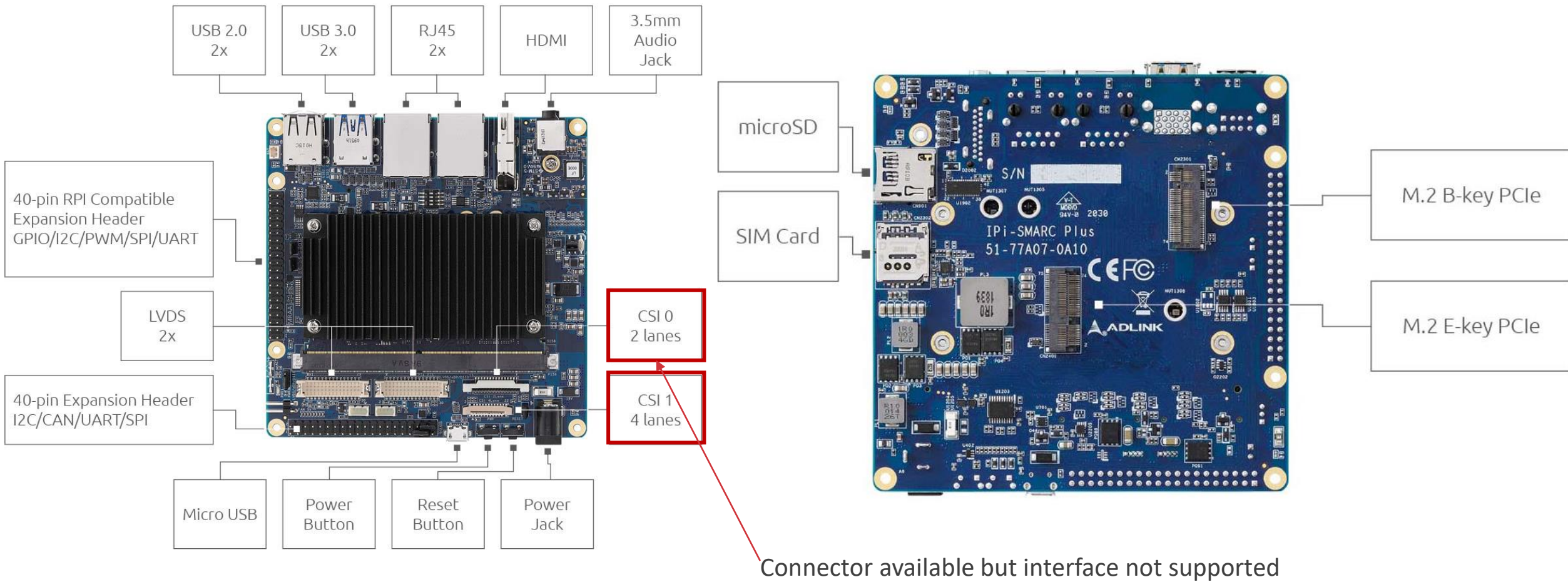
SoM quick specs

- SMARC rev. 2.1 compliant
- *Intel Atom*® x6000E Series and Intel® Pentium® and Celeron® N and J Series *processors* (code named Elkhart Lake) 2/4 core
- Intel® 11th graphics Intel® Core™ (up to 32 EU's)
- Dual 2.5 Gbit ethernet (optional *Intel*® Time-Sensitive Networking (*Intel*® TSN) SKU's)
- LPDDR4 up to 16GB
- eMMC up to 128GB
- FUSA SKU's available
- TPM 2.0 (optional)
- Crypto chip (optional)
- HDMI / LVDS / DP++
- PCIe Gen3, SATA Gen3, USB 3.2, USB2.0
- 4x UART, 2x CANbus, 2x SPI, 4x I2C, 14x GPIO

15 years availability

FUSA = functional safety

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Leading **EDGE COMPUTING**

adlinktech.com

Carrier board user interfaces

USB 2.0 2x

USB 3.0 2x

RJ45 2x

HDMI

3.5mm Audio Jack

microSD

SIM Card

M.2 B-key PCIe

M.2 E-key PCIe

40-pin RPI Compatible Expansion Header GPIO/I2C/PWM/SPI/UART

LVDS 2x

CSI 0 2 lanes

CSI 1 4 lanes

40-pin Expansion Header I2C/CAN/UART/SPI

Micro USB

Power Button

Reset Button

Power Jack

Connector available but interface not supported

Leading EDGE COMPUTING

Thank you
for watching!

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