

Product Brief

Intel® Quark SoC X1000

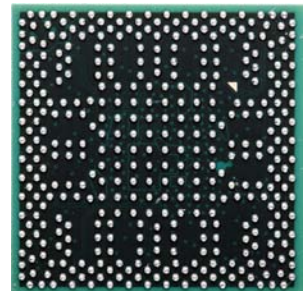


Product Overview

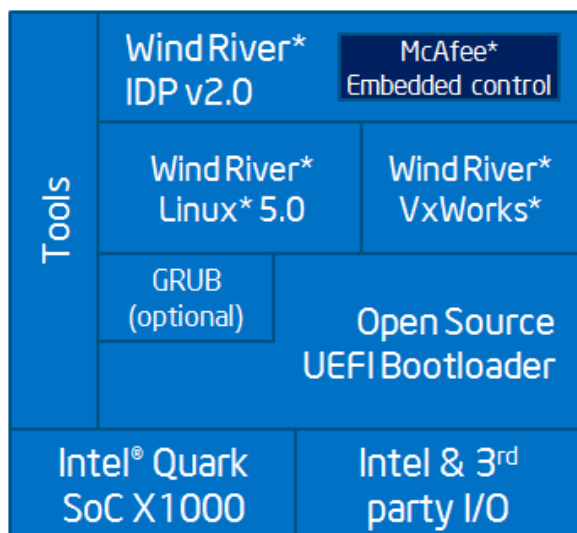
The Intel® Quark SoC X1000 is the first product in a new roadmap of innovative, small core products targeted at rapidly growing areas ranging from industrial IoT to wearables. It will bring low power and Intel compute capabilities for thermally constrained, fanless, and headless applications. With its security and manageability features, this SoC is ideally suited for the Internet of Things (IoT) and for the next wave of cost-effective intelligent connected devices.

Featuring secure boot, extended lifecycle support, extended temperature and ECC, this processor offers an excellent solution for embedded market segments such as transportation, energy, and commercial and industrial control. The processor remains software compatible with previous 32-bit Intel® architecture and complementary silicon.

This Pentium® ISA compatible, single-core, single-threaded SoC offers rich I/O capabilities and flexibility via high-bandwidth interfaces such as PCI Express* and USB 2.0 and offers the interfaces for a broad range of connectivity options such as two Ethernet* interfaces on chip and interfaces to connect Cellular, Bluetooth*, ZigBee*, and other connectivity options. Using SD/SDIO/eMMC card interfaces, SPI, UART, and GPIO ports, the SoC connects seamlessly to sensors and various memory options.



Intel® Quark SoC X1000 Software Stack



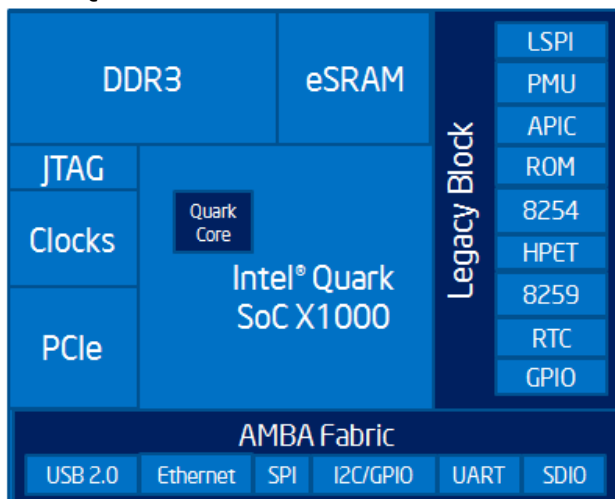
IoT Software Stack

The Intel® Quark SoC X1000 is provided with a software suite of interoperable security, manageability and connectivity features, allowing true scalability in performance and features. It is supported by the Wind River Intelligent Device Platform (IDP), which is the operating system and middleware software stack that binds together the connectivity, security, and management on a scalable Intel architecture processing solution. This software solution is specifically packaged and validated to support the ability for developers to move immediately to the creation of high value applications and services.

Software Stack Highlights

- Provides interoperable connectivity, security, and manageability features on a scalable Intel architecture processing solution.
- Packaged to enable rapid application and service development.
- Validated and tested to assure seamless interoperability.
- Compatible and interoperable with the IoT stacks on other Intel processors such as Intel® Atom™ processor and Intel® Core™ processor.

Intel® Quark SoC X1000



Industry Standard Software Systems

Operating System	Contact
Linux* (Yocto)	Intel-provided drivers / build scripts
Wind River* Linux 5.0	Wind River Systems
VxWorks*	Wind River Systems
UEFI	Intel-provided drivers
Grub	Intel-provided drivers

Product Highlights - Hardware

- Pentium® ISA compatible, single-core, single-threaded, 32-bit Intel® Quark processor based on Intel architecture running at 400 MHz.
- DDR3 800MTs memory interface with ECC.
- AMBA Bus fabric provides flexible silicon IP offering.
- High integration level of high and low speed I/O interfaces, clocks, and voltage regulator into a 15x15 mm package reduces the number of external components required on the platform.
- Large 0.593 ball pitch allows for low cost PCB designs to address cost sensitive applications.
- Embedded temperature range option of -40°C to +85°C meets requirements for industrial, medical, and military application designs with constrained thermal environments to extend the product reach into harsh environments.
- Embedded lifecycle support protects system investment by enabling extended product availability for embedded customers.
- Legacy Bridge interface to PC compatible features.
- Provided as an Integrated Software Stack including:
 - Hardware based root of trust for secure boot
 - UEFI EDK II Open Source firmware
 - GRUB open source bootloader
 - Wind River Linux with IDP 2.0
 - Wind River VxWorks
 - McAfee Embedded Control

Intel® Quark SoC for Embedded Computing and IoT

Product Variant	Core Speed	Memory Speed	SRAM	Thermal Design Point	Temperature	Package
Intel® Quark SoC X1000	400 MHz	800 MTs	On-die 512 KB	TDP = 1.9W - 2.2W (depends on VR) Tj = 110°C	0 to 70° C (commercial) Extended temperature variants coming soon.	15 mm x 15 mm

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