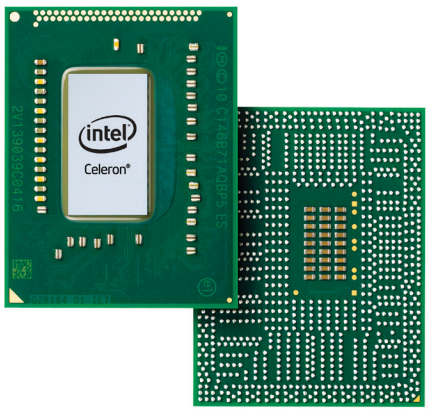
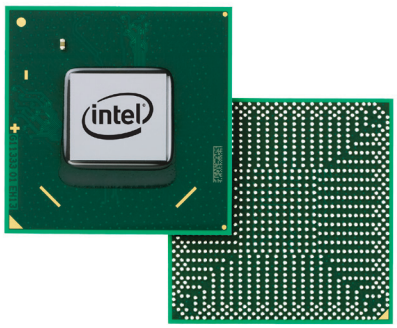
PLATFORM BRIEF
Intel® Celeron® Processors with Mobile Intel® QM77 and HM76 Express Chipsets
Intelligent Systems

Intel® Celeron® Processor (1020E, 1047UE, 927UE)-Based Platforms for Intelligent Systems

Ideal for Intelligent Systems—context-aware, securely managed embedded devices that connect seamlessly to networks, clouds and each other.





Product Overview

Based on 3rd generation Intel® Core™ microarchitecture on 22nm process technology, these Intel® Celeron® processors feature enhanced power efficiency and graphics with new levels of performance for embedded applications. When paired with the Mobile Intel® QM77 Express or Mobile Intel® HM76 Express chipset, these two-chip platforms provide excellent media, graphics, and I/O flexibility to meet the requirements of a broad range of embedded applications, including retail and transaction solutions, signage, gaming platforms, industrial automation, and medical equipment.

Dual- and single-core processing capabilities, with 17W and 35W thermal design power (TDP), deliver excellent performance and value. While incorporating advanced technology, these processors remain software-compatible with previous IA-32 processors.

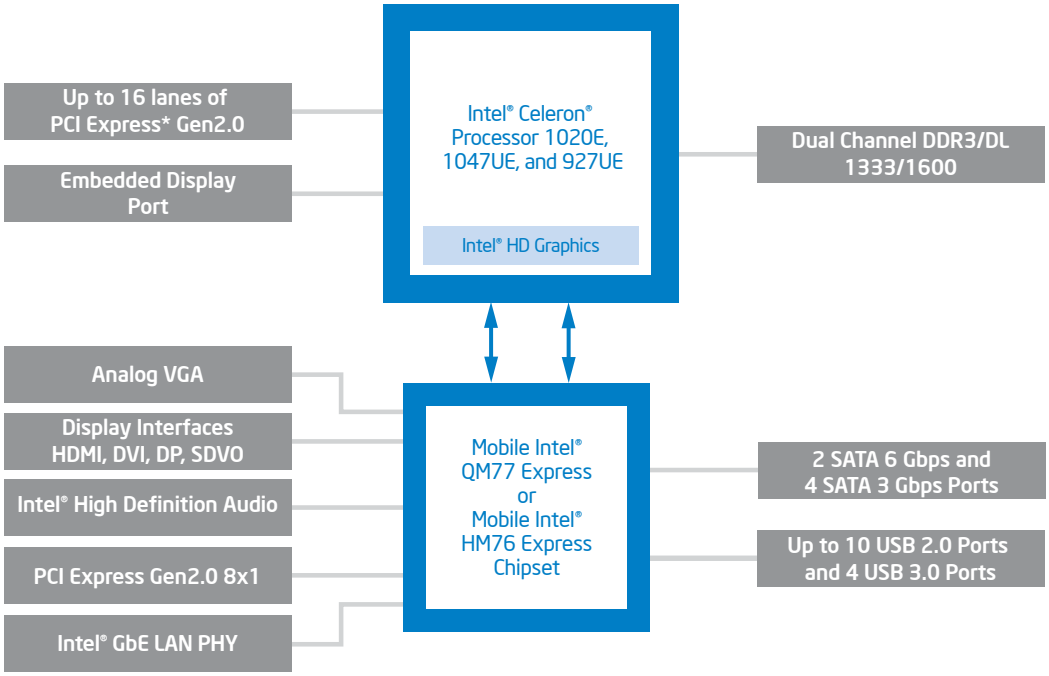
Next-generation Intel® HD Graphics provide improved graphics performance compared with previous Intel Celeron processor-based platforms. Full integration of the CPU, media/graphics capabilities and memory controller helps reduce overall platform footprint and provides faster performance as well as board real estate savings.

Product Highlights

Intel® HD Graphics: Supports enhanced media/graphics capabilities and performance while reducing overall platform power requirements and footprint.

Intel® Intelligent Power Technology[1]: Reduces idle power consumption through architectural improvements such as integrated power gates and automated low-power states.

Intel® Virtualization Technology[2] (Intel® VT): Combined with software-based virtualization solutions, Intel VT provides maximum system utilization by consolidating multiple environments into a single embedded system.



Software Overview

The following independent operating system and BIOS vendors provide support for this platform.

OPERATING SYSTEM	CONTACT
Microsoft Windows* 8	Intel provides drivers[3]
Microsoft Windows* 7	Intel provides drivers[3]
Microsoft Windows* XP SP3	Intel provides drivers[3]
Microsoft Windows Embedded Standard 7	Intel provides drivers[3]
Microsoft Windows Embedded Standard 2009	Intel provides drivers[3]
Microsoft Windows Embedded POSReady (WEPOS)	Intel provides drivers[3]
Red Hat Enterprise Linux* 6.1	Red Hat
SUSE SLE* 11 SP1	Novell
Wind River Linux* 3.0	Wind River
Wind River VxWorks* 6.8	Wind River

BIOS
American Megatrends
Insyde Software
Phoenix Technologies
Byosoft

Platform Features and Benefits

FEATURES	BENEFITS
Supports key embedded platform requirements	Ideal for compute-intensive embedded applications.
Extended life cycle product support	Protects system investment by enabling extended product availability for embedded customers.
Intelligent Systems ecosystem support	Along with a strong ecosystem of hardware and software vendors, including members of the Intelligent Systems Alliance (intel.com/go/intelligentsystems-alliance), Intel helps to cost-effectively meet development challenges and speed time-to-market.
Intelligent performance	Delivers optimum efficiency by adapting performance to embedded application needs.
Intel® Smart Cache Technology	Large on-die shared last-level cache reduces latency to data, improving performance and power efficiency.
Intel® Intelligent Power Technology[1]	Automated energy efficiency reduces power consumption.
Integrated power gates	Reduces idle processor cores to near zero power when not in use to help conserve power and lower operating costs.
Automated low-power states	Adjusts system power consumption based on real-time processor loads.
Virtualization	Increases performance of virtual computing environments enabling more robust embedded applications.
Intel® Virtualization Technology[2]	Speeds the transfer of platform control and movement of data between the virtual machine monitor (VMM) and other platform agents (including guest operating systems and I/O devices). By lowering the workload on the VMM, this technology addresses many embedded system design challenges, like migrating legacy software, increasing real-time performance, and making applications more secure.

Intel® Celeron® Processors for Embedded Computing

PRODUCT NAME[Δ]	CORES	CORE FREQUENCY	INTEL® SMART CACHE	THERMAL DESIGN POWER	PACKAGE	ERROR CORRECTING CODE	INTEL® VIRTUALIZATION TECHNOLOGY
Intel® Celeron® Processor 1020E	2	2.2 GHz	2 MB	35 W	FCPGA 988	No	Yes
Intel® Celeron® Processor 1020E	2	2.2 GHz	2 MB	35 W	FCBGA 1023	Yes	Yes
Intel® Celeron® Processor 1047UE	2	1.4 GHz	2 MB	17 W	FCBGA 1023	Yes	Yes
Intel® Celeron® Processor 927UE	1	1.5 GHz	1 MB	17 W	FCBGA 1023	Yes	Yes

Mobile Intel® QM77 Express and Mobile Intel® HM76 Express Chipsets for Embedded Computing

PRODUCT	PRODUCT CODE	PACKAGE	FEATURES
Intel® BD82QM77 Platform Controller Hub	BD82QM77	FCBGA 989	4 SATA 3.0 Gb/s ports , 2 SATA 6.0 Gb/s ports; 8 PCI Express I/O ports; 10 USB 2.0 ports, 4 USB 3.0 ports
Intel® BD82HM76 Platform Controller Hub	BD82HM76	FCBGA 989	4 SATA 3.0 Gb/s ports , 2 SATA 6.0 Gb/s ports; 8 PCI Express I/O ports; 8 USB 2.0 ports, 4 USB 3.0 ports

Intel in Intelligent Systems: **intel.com/intelligentsystems**

[Δ] Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See www.intel.com/products/processor_number for details.

[1] Intel® Intelligent Power Technology requires a computer system with an enabled Intel® processor, chipset, BIOS and for some features, an operating system enabled for it. Functionality or other benefits may vary depending on hardware implementation and may require a BIOS and/or operating system update. Please check with your system vendor for details.

[2] Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, virtual machine monitor (VMM). Functionality, performance or other benefits will vary depending on hardware and software configurations. Software applications may not be compatible with all operating systems. Consult your PC manufacturer. For more information, visit http://www.intel.com/go/virtualization.

[3] Drivers available at: downloadcenter.intel.com (enter chipset name).

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