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Understanding Embedded - Microprocessors

Embedded microprocessors are specialized computing chips designed to perform specific tasks within an embedded system. Unlike general-purpose microprocessors found in personal computers, embedded microprocessors are tailored for dedicated functions within larger systems, offering optimized performance, efficiency, and reliability. These microprocessors are integral to the operation of countless electronic devices, providing the computational power necessary for controlling processes, handling data, and managing communications.

Applications of Embedded - Microprocessors

Embedded microprocessors are utilized across a broad spectrum of applications, making them indispensable in

Details	
Product Status	Active
Core Processor	Xeon E5-2648L
Number of Cores/Bus Width	8 Core, 64-Bit
Speed	1.8GHz
Co-Processors/DSP	-
RAM Controllers	-
Graphics Acceleration	-
Display & Interface Controllers	-
Ethernet	-
SATA	-
USB	-
Voltage - I/O	-
Operating Temperature	-
Security Features	-
Package / Case	2011-LGA Module
Supplier Device Package	2011-LGA
Purchase URL	https://www.e-xfl.com/product-detail/advantech/96mpxe-1-8-20m20t

Intel® Xeon® Processor E5-2648L (20M, 1.80 GHz, 8.0 GT/s Intel® QPI)

Specifications

Essentials	
Status	Launched
Launch Date	Q1'12
Expected Discontinuance	Q1'19
Processor Number	E5-2648L
# of Cores	8
# of Threads	16
Clock Speed	1.8 GHz
Max Turbo Frequency	2.1 GHz
Intel® QPI Speed	8 GT/s
# of QPI Links	2
Instruction Set	64-bit
Instruction Set Extensions	YES
Embedded Options Available	Yes
Max TDP	70 W
Recommended Customer Price	$1186

Memory Specifications	
Memory Types	DDR3-1600
# of Memory Channels	4
ECC Memory Supported	Yes
Graphics Specifications	
Integrated Graphics	
Expansion Options	
PCI Express Revision	Gen 3.0
# of PCI Express Ports	40
Package Specifications	
Sockets Supported	FCLGA2011
Low Halogen Options Available	See MDDS
Advanced Technologies	
Intel® Turbo Boost Technology	Yes
Intel® Hyper-Threading Technology	Yes
Intel® Virtualization Technology (VT-x)	Yes
Intel® Virtualization Technology for Directed I/O (VT-d)	Yes
Intel® Trusted Execution Technology	Yes
AES New Instructions	Yes
Intel® 64	Yes
Enhanced Intel SpeedStep® Technology	Yes

ORDERING AND SPEC INFORMATION

Ordering and Spec Information

Intel® Xeon® Processor E5-2648L (20M, 1.80 GHz, 8.0 GT/s Intel® QPI) FC-LGA10, Tray

Socket	Step	Step TDP	Ordering Code	Spec Code	VT-x	RCP
FCLGA2011	C2	70 W	CM8062100854905	SR0LX	Yes	$1186

"Announced" SKUs are not yet available. Please refer to the Launch Date for market availability.

The Recommended Customer Price ("RCP") is pricing guidance for Intel products. Prices are for direct Intel customers and are subject to change without notice. Taxes and shipping, etc. not included. Prices may vary for other package types and shipment quantities, and special promotional arrangements may apply. Listing of these RCP does not constitute a formal pricing offer from Intel. Please work with your appropriate Intel representative to obtain a formal price quotation.

Enabling Execute Disable Bit functionality requires a PC with a processor with Execute Disable Bit capability and a supporting operating system. Check with your PC manufacturer on whether your system delivers Execute Disable Bit functionality.

64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Consult with your system vendor for more information.

Hyper-Threading Technology (HT Technology) requires a computer system with an Intel® processor supporting HT Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See www.intel.com/products/ht/hyperthreading_more.htm for more information including details on which processors support HT Technology.

Intel® Virtualization Technology requires a computer system with a processor, chipset, BIOS, virtual machine monitor (VMM) and for some uses, certain platform software, enabled for it. Functionality, performance or other benefit will vary depending on hardware and software configurations. Intel Virtualization Technology-enabled VMM applications are currently in development.

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

System and Maximum TDP is based on worst case scenarios. Actual TDP may be lower if not all I/Os for chipsets are used.

All information provided is subject to change at any time, without notice. Intel may make changes to manufacturing life cycle, specifications, and product descriptions at any time, without notice. The information herein is provided "as-is" and Intel does not make any representations or warranties whatsoever regarding accuracy of the information, nor on the product features, availability, functionality, or compatibility of the products listed. Please contact system vendor for more information on specific products or systems.

Low Halogen: Applies only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709 requirements, and the PCB / substrate meet IEC 61249-2-21 requirements. The replacement of halogenated flame retardants and/or PVC may not be better for the environment.

Max Turbo Frequency refers to the maximum single-core frequency that can be achieved with Intel® Turbo Boost Technology, which requires a PC with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software, and overall system configuration. Check with your PC manufacturer on whether your system delivers Intel Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

Some products can support AES New Instructions with a Processor Configuration update, in particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Please contact OEM for the BIOS that includes the latest Processor configuration update