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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	Obsolete
Core Processor	i5-750
Number of Cores/Bus Width	4 Core, 64-Bit
Speed	2.66GHz
Co-Processors/DSP	-
RAM Controllers	-
Graphics Acceleration	-
Display & Interface Controllers	-
Ethernet	-
SATA	-
USB	-
Voltage - I/O	-
Operating Temperature	-
Security Features	-
Package / Case	1156-LGA Module
Supplier Device Package	1156-LGA (37.5x37.5)
Purchase URL	https://www.e-xfl.com/product-detail/advantech/96mpi5-2-66-8m11t

Intel® Core™ i5-750 Processor (8M Cache, 2.66 GHz)

Additional Information

Quick Links
Embedded
PCN/MDDS Information

Products formerly Lynnfield
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Specifications

Essentials	
Status	Launched
Launch Date	Q3'09
Processor Number	i5-750
# of Cores	4
# of Threads	4
Clock Speed	2.66 GHz
Max Turbo Frequency	3.2 GHz
Intel® Smart Cache	8 MB
Bus/Core Ratio	20
DMI	2.5 GT/s
Instruction Set	64-bit
Instruction Set Extensions	SSE4.2
Embedded Options Available	Yes
Lithography	45 nm
Max TDP	95 W
VID Voltage Range	0.6500V-1.4000V
Recommended Channel Price	$196.00
Memory Specifications	
Max Memory Size (dependent on memory type)	16 GB
Memory Types	DDR3-1066/1333
# of Memory Channels	2
Max Memory Bandwidth	21 GB/s
Physical Address Extensions	36-bit
Graphics Specifications	
Integrated Graphics	No
Expansion Options	
PCI Express Revision	2.0
PCI Express Configurations	1x16, 2x8
# of PCI Express Ports	1
Package Specifications	
Max CPU Configuration	1
T_{CASE}	72.7°C
Package Size	37.5mm x 37.5mm
Processing Die Size	296 mm^2
# of Processing Die Transistors	774 million
Sockets Supported	LGA1156
Halogen Free Options Available	Yes

Intel® Hyper-Threading Technology	No
Intel® Virtualization Technology (VT-x)	Yes
Intel® Trusted Execution Technology	No
AES New Instructions	No
Intel® 64	Yes
Idle States	Yes
Enhanced Intel SpeedStep® Technology	Yes
Intel® Demand Based Switching	No
Thermal Monitoring Technologies	No
Execute Disable Bit	Yes

Ordering and Spec Information

Ordering and Spec Information
Intel® Core™ i5-750 Processor (8M Cache, 2.66 GHz) FC-LGA8, Tray

Socket	Step	Step TDP	Ordering Code	Spec Code	Halogen Free	VT-x
LGA1156	B1	95 W	BV80605001911AP	SLBLC	Yes	Yes

Boxed Intel® Core™ i5-750 Processor (8M Cache, 2.66 GHz) FC-LGA8

Socket	Step	Step TDP	Ordering Code	Spec Code	Halogen Free	VT-x
LGA1156	B1	95 W	BX80605I5750	SLBLC	Yes	Yes

Compatible Products

Boards
Chipsets

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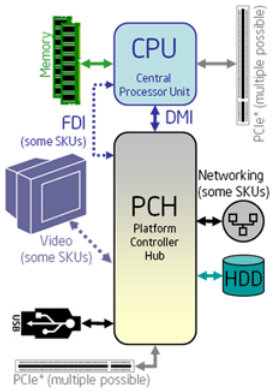
Block Diagrams



Disclaimers

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

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.

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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.

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Halogen Free implies the following:

Bromine and/or chlorine in materials that may be used during processing, but do not remain within the final product are not included in this definition. The halogens fluorine (F), iodine (I), and astatine (At) are not restricted by this standard.

“BFR/CFR and PVC-Free” Definition: :

All PCB laminates must meet Br and Cl requirements for low halogen as defined in IPC-4101B
For components other than PCB laminates, all homogeneous materials must contain < 900 ppm (0.09%) of Bromine [if the Bromine (Br) source is from BFRs] and < 900 ppm (0.09%) of Chlorine [if the Chlorine (Cl) source is from CFRs or PVC. Higher concentrations of Br and Cl are allowed in homogenous materials of components other than PCB laminates as long as their sources are not BFRs, CFRs, PVC.
Although the elemental analysis for Br and Cl in homogeneous materials can be performed by any analytical method with sufficient sensitivity and selectivity, the presence or absence of BFRs, CFRs or PVC must be verified by any acceptable analytical techniques that allow for the unequivocal identification of the specific Br or Cl compounds, or by appropriate material declarations agreed to between customer and supplier.

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.