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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	Discontinued at Digi-Key	
Core Processor	Xeon Gold 6130	
Number of Cores/Bus Width	16 Core, 64-Bit	
Speed	2.1GHz	
Co-Processors/DSP	-	
RAM Controllers	DDR4	
Graphics Acceleration	Νο	
Display & Interface Controllers	-	
Ethernet	-	
SATA	-	
USB	-	
Voltage - I/O	-	
Operating Temperature	-	
Security Features	-	
Package / Case	3647-LGA Module	
Supplier Device Package	3647-FCLGA (76x56.5)	
Purchase URL	https://www.e-xfl.com/product-detail/advantech/96mpxe-2-1-22m36	

Email: info@E-XFL.COM

Address: Room A, 16/F, Full Win Commercial Centre, 573 Nathan Road, Mongkok, Hong Kong



# Intel® Xeon® Gold 6130 Processor

22M Cache, 2.10 GHz

Spec Code

SR3B9

Ordering Code

CD8067303409000

## Intel® Xeon® Gold 6130 Processor (22M Cache, 2.10 GHz)

Code Name	Skylake		
Essentials			
Vertical Segment	Server		
Processor Number	6130		
Status	Launched		
Launch Date	Q3'17		
Lithography	14 nm		
Recommended Customer Price	\$1894.00 - \$1900.00		
Performance			
# of Cores	16		
# of Threads	32		
Processor Base Frequency	2.10 GHz		
Max Turbo Frequency	3.70 GHz		
Cache	22 MB L3		
# of UPI Links	3		
<u>TDP</u>	<u>125 W</u>		
Supplemental Information			
Embedded Options Available	Yes		
Conflict Free	Yes		
Datasheet	Link		
Product Brief	Link		
Memory Specifications			
Max Memory Size (dependent on memory typ 768 GB			

Maximum Memory Speed   2.67 GHz     Max # of Memory Channels   6     ECC Memory Supported ±   Yes     Expansion Options   S4S     PCI Express Revision   3.0     Max # of PCI Express Lanes   48     Package Specifications   FCLGA3647     Sockets Supported   FCLGA3647     T <sub>CASE   87°C     Package Size   76.0mm x 56.5mm     Low Halogen Options Available   See MDDS     Advanced Technologies   Intel® Optane™ Memory Supported ‡     Intel® Optane™ Memory Supported ‡   No     Intel® Speed Shift Technology   Yes     Intel® Turbo Boost Technology 3.0 ‡   No     Intel® Turbo Boost Technology 1   Yes     Intel® Turbo Boost Technology 2   Yes     Intel® Turbo Boost Technology 1   Yes     Intel® Turbo Boost Technology 2   Yes     Intel® Virtualization Technology 1   Yes     Intel® Threading Technology 1   Yes     Intel® TX-NI   Yes     Intel® Volume Management Device (VM</sub>	Memory Types	DDR4-2666			
Max # of Memory Channels   6     ECC Memory Supported ‡   Yes     Expansion Options   Scalability     Scalability   S4S     PCI Express Revision   3.0     Max # of PCI Express Lanes   48     Package Specifications   Sockets Supported     Sockets Supported   FCLGA3647     T <sub>CASE   87°C     Package Size   76.0mm x 56.5mm     Low Halogen Options Available   See MDDS     Advanced Technologies   No     Intel® Optane™ Memory Supported ‡   No     Intel® Speed Shift Technology   Yes     Intel® Turbo Boost Technology 3.0 ‡   No     Intel® Turbo Boost Technology 1   Yes     Intel® Tyrbeading Technology 1   Yes     Intel® Tyrbeading Technology 2   Yes     Intel® Tyrbeading Technology 1   Yes     Intel® Tyrbeading Technology 1   Yes     Intel® Tyrbeading Technology 1   Yes     Intel® At 1   Yes     Intel® At 2   Yes     Intel® At 2<td></td><td></td></sub>					
ECC Memory Supported ±       Yes         Expansion Options       Scalability       S4S         PCI Express Revision       3.0       Max # of PCI Express Lanes       48         Package Specifications       Sockets Supported       FCLGA3647         Sockets Supported       SCC GA3647       Sockets Supported         T <sub>CASE       87°C         Package Size       76.0mm x 56.5mm         Low Halogen Options Available       See MDDS         Advanced Technologies       See MDDS         Intel® Optione™ Memory Supported ‡       No         Intel® Optione™ Memory Supported ‡       No         Intel® Speed Shift Technology       Yes         Intel® Speed Shift Technology 3.0 ‡       No         Intel® Turbo Boost Max Technology 3.0 ‡       Yes         Intel® Turbo Boost Technology 1       Yes         Intel® Virtualization Technology 1       Yes         Intel® TSX-NI       Yes         Intel® SE 4.2, Intel® AVX2, Intel® AVX2, Intel® AVX-512         # of AVX-512 FMA Units       2         Intel® Volume Management Device (VMD)       Yes         Security &amp; Reliability       Yes         Intel® AES New Instructions       Yes</sub>					
Expansion Options         Scalability       S4S         PCI Express Revision       3.0         Max # of PCI Express Lanes       48         Package Specifications       Sockets Supported         Sockets Supported       FCLGA3647         T <sub>CASE</sub> 87°C         Package Size       76.0mm x 56.5mm         Low Halogen Options Available       See MDDS         Advanced Technologies       Technology         Intel® Optione™ Memory Supported ‡       No         Intel® Option Memory Supported ‡       No         Intel® Option Technology 3.0 ‡       No         Intel® Speed Shift Technology       Yes         Intel® VPro™ Technology 1       Yes         Intel® Virtualization Technology 1       Yes         Intel® Str.NI       Yes         Intel® Str.NI       Yes         Intel® Str.NI       Yes         Intel® Str.NI       Yes         Intel® Vorum Management Device (VMD)       Yes         Security & Reliability       Yes         Intel® Vorum Management Device (VMD)       Yes         Security & Reliability       Yes         Intel® RES New Instructions       Yes	-				
Scalability   S4S     PCI Express Revision   3.0     Max # of PCI Express Lanes   48     Package Specifications   FCLGA3647     Sockets Supported   FCLGA3647     T <sub>CASE</sub> 87°C     Package Size   76.0mm x 56.5mm     Low Halogen Options Available   See MDDS     Advanced Technologies   No     Intel® Optane™ Memory Supported ‡   No     Intel® Speed Shift Technology   Yes     Intel® Turbo Boost Max Technology 3.0 ‡   No     Intel® Turbo Boost Technology 1   Yes     Intel® VPro™ Technology 1   Yes     Intel® Virtualization Technology (VT-x) ‡   Yes     Intel® TSX-NI   Yes     Intel® TSX-NI   Yes     Intel® TSX-NI   Yes     Intel® TSX-NI   Yes     Intel® Advarced Extensions   Intel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512     # of AVX-512 FMA Units   2     Intel® Volume Management Device (VMD) Yes     Security & Reliability   Yes     Intel® Trusted Execution Technology ‡   Yes     Intel® New Instructions   Yes     Intel® Turbe Management Device (VMD) Yes		Yes			
PCI Express Revision   3.0     Max # of PCI Express Lanes   48     Package Specifications   FCLGA3647     Sockets Supported   FCLGA3647     T <sub>CASE</sub> 87°C     Package Size   76.0mm x 56.5mm     Low Halogen Options Available   See MDDS     Advanced Technologies   No     Intel® Optane™ Memory Supported ‡   No     Intel® Speed Shift Technology   Yes     Intel® Turbo Boost Max Technology 3.0 ‡   No     Intel® Turbo Boost Technology 1   Yes     Intel® VPro™ Technology 1   Yes     Intel® Virtualization Technology (VT-x) ‡   Yes     Intel® TSX-NI   Yes     Intel® New Instructions   Yes     Intel® New Instructions   Yes     Intel® AES New Instructions   Yes     Intel® Trusted Execution Technology ‡   Yes     Intel® Trusted Execution Technology ‡   Yes	Expansion Options				
Max # of PCI Express Lanes48Package SpecificationsFCLGA3647Sockets SupportedFCLGA3647Sockets Supported87°CPackage Size76.0mm x 56.5mmLow Halogen Options AvailableSee MDDSAdvanced TechnologiesNoIntel® Optane™ Memory Supported ‡NoIntel® Speed Shift TechnologyYesIntel® Turbo Boost Max Technology 3.0 ‡NoIntel® Turbo Boost Technology ‡YesIntel® Turbo Boost Technology ‡YesIntel® Turbo Boost Technology (VT-x) ‡YesIntel® TSX-NIYesIntel® TSX-NIYesIntel® 64 ‡YesIntel® 64 ‡YesIntel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® Trusted Execution Technology ‡YesIntel® New InstructionsYesIntel® Run Sure Technology ‡YesIntel® Run Sure Technology ‡YesIntel® Run Sure Technology ±YesIntel® Run Sure Technology ±Yes	Scalability	S4S			
Package Specifications       Sockets Supported     FCLGA3647       T <sub>CASE</sub> 87°C       Package Size     76.0mm x 56.5mm       Low Halogen Options Available     See MDDS       Advanced Technologies     Intel® Optane™ Memory Supported ‡       Intel® Optane™ Memory Supported ‡     No       Intel® Turbo Boost Max Technology 3.0 ‡     No       Intel® Turbo Boost Technology 3.0 ‡     Ves       Intel® Turbo Boost Technology 4     Yes       Intel® Turbo Boost Technology 1     Yes       Intel® Turbo Boost Technology 2     Yes       Intel® Turbo Boost Technology 4     Yes       Intel® Turbo Boost Technology 5     Yes       Intel® VPro™ Technology 1     Yes       Intel® Virtualization Technology (VT-x) ‡     Yes       Intel® TSX-NI     Yes       Intel® G4 ‡     Yes       Instruction Set Extensions     Intel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512       # of AVX-512 FMA Units     2       Security & Reliability     Yes       Intel® Trusted Execution Technology ‡     Yes       Intel® Trusted Execution Technology ‡     Yes       Intel® Trusted Execution Technology ‡     Yes <td>PCI Express Revision</td> <td>3.0</td>	PCI Express Revision	3.0			
Sockets SupportedFCLGA3647Sockets Supported87°CPackage Size76.0mm x 56.5mmLow Halogen Options AvailableSee MDDSAdvanced TechnologiesSee MDDSAdvanced TechnologiesNoIntel® Optane™ Memory Supported ‡NoIntel® Speed Shift TechnologyYesIntel® Turbo Boost Max Technology 3.0 ‡NoIntel® Turbo Boost Technology2.0Intel® Turbo Boost Technology ‡YesIntel® VPro™ Technology (VT-x) ‡YesIntel® TSX-NIYesIntel® TSX-NIYesIntel® 64 ‡YesIntel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure Technology ‡YesIntel® Run Sure TechnologyYes	Max # of PCI Express Lanes	<u>48</u>			
T <sub>CASE</sub> 87°CPackage Size76.0mm x 56.5mmLow Halogen Options AvailableSee MDDSAdvanced TechnologiesNoIntel® Optane™ Memory Supported ‡NoIntel® Speed Shift TechnologyYesIntel® Turbo Boost Max Technology 3.0 ‡NoIntel® Turbo Boost Technology 2.0Intel® Turbo Boost Technology ‡Intel® VPro™ Technology ‡YesIntel® VPro™ Technology (VT-x) ‡YesIntel® TSX-NIYesIntel® 64 ‡YesIntel® 64 ‡YesIntel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® Trusted Execution Technology ‡YesIntel® Trusted Execution Technology ‡YesIntel® New InstructionsYesIntel® New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure Technology ‡Yes	Package Specifications				
Package Size     76.0mm × 56.5mm       Low Halogen Options Available     See MDDS       Advanced Technologies     No       Intel® Optane™ Memory Supported ‡     No       Intel® Speed Shift Technology     Yes       Intel® Turbo Boost Max Technology 3.0 ‡     No       Intel® Turbo Boost Technology     2.0       Intel® VPro™ Technology ‡     Yes       Intel® Virualization Technology (VT-x) ‡     Yes       Intel® TSX-NI     Yes       Intel® 64 ‡     Yes       Intel® 64 ‡     Yes       Intel® VAX-512 FMA Units     2       Intel® Ves     Security & Reliability       Intel® AES New Instructions     Yes       Intel® Trusted Execution Technology ‡     Yes       Intel® Tursted Execution Technology (YT-x) \$     Yes	Sockets Supported	FCLGA3647			
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Advanced Technologies       Intel® Optane ™ Memory Supported ‡     No       Intel® Speed Shift Technology     Yes       Intel® Turbo Boost Max Technology 3.0 ‡     No       Intel® Turbo Boost Technology     2.0       Intel® vPro™ Technology ‡     Yes       Intel® vPro™ Technology ‡     Yes       Intel® Virtualization Technology (VT-x) ‡     Yes       Intel® TSX-NI     Yes       Intel® 64 ‡     Yes       Instruction Set Extensions     Intel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512       # of AVX-512 FMA Units     2       Security & Reliability     Yes       Intel® AES New Instructions     Yes       Intel® Trusted Execution Technology ‡     Yes	Package Size	76.0mm x 56.5mm			
Intel® Optane ™ Memory Supported ‡NoIntel® Speed Shift TechnologyYesIntel® Turbo Boost Max Technology 3.0 ‡NoIntel® Turbo Boost Technology2.0Intel® vPro ™ Technology ‡YesIntel® vPro ™ Technology ‡YesIntel® Virtualization Technology (VT-x) ‡YesIntel® TSX-NIYesIntel® 64 ‡YesIntel® 64 ‡YesIntel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Trusted Execution Technology YYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure Technology ¥Yes	Low Halogen Options Available	See MDDS			
Intel® Speed Shift TechnologyYesIntel® Turbo Boost Max Technology 3.0 ‡NoIntel® Turbo Boost Technology2.0Intel® VPro™ Technology ‡YesIntel® VPro™ Technology ‡YesIntel® Hyper-Threading Technology ‡YesIntel® Virtualization Technology (VT-x) ‡YesIntel® TSX-NIYesIntel® 64 ‡YesInstruction Set ExtensionsIntel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512# of AVX-512 FMA Units2Security & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure Technology ‡Yes	Advanced Technologies				
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Intel® Turbo Boost Technology2.0Intel® Turbo Boost Technology ‡YesIntel® VPro™ Technology ‡YesIntel® Hyper-Threading Technology (VT-x) ‡YesIntel® Virtualization Technology (VT-x) ‡YesIntel® TSX-NIYesIntel® 64 ‡YesInstruction Set ExtensionsIntel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512# of AVX-512 FMA Units2Intel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure TechnologyYes	Intel® Speed Shift Technology	Yes			
Intel® vPro™ Technology ‡YesIntel® Hyper-Threading Technology ‡YesIntel® Virtualization Technology (VT-x) ‡YesIntel® TSX-NIYesIntel® 64 ‡YesInstruction Set ExtensionsIntel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512# of AVX-512 FMA Units2Intel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure TechnologyYes	Intel® Turbo Boost Max Technology 3.0 ‡	No			
Intel® Hyper-Threading Technology ‡YesIntel® Virtualization Technology (VT-x) ‡YesIntel® TSX-NIYesIntel® 64 ‡YesInstruction Set ExtensionsIntel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512# of AVX-512 FMA Units2Intel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure TechnologyYes	Intel® Turbo Boost Technology	2.0			
Intel® Virtualization Technology (VT-x) ‡YesIntel® TSX-NIYesIntel® 64 ‡YesInstruction Set ExtensionsIntel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512# of AVX-512 FMA Units2Intel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure TechnologyYes	Intel® vPro™ Technology ‡	Yes			
Intel® TSX-NIYesIntel® 64 ‡YesInstruction Set ExtensionsIntel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512# of AVX-512 FMA Units2Intel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure TechnologyYes	Intel® Hyper-Threading Technology ‡	Yes			
Intel® 64 ‡YesInstruction Set ExtensionsIntel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512# of AVX-512 FMA Units2Intel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure TechnologyYes	Intel® Virtualization Technology (VT-x) ‡	Yes			
Instruction Set ExtensionsIntel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512# of AVX-512 FMA Units2Intel® Volume Management Device (VMD)YesSecurity & ReliabilityYesIntel® AES New InstructionsYesIntel® Trusted Execution Technology ‡YesIntel® Run Sure TechnologyYes	Intel® TSX-NI	Yes			
# of AVX-512 FMA Units 2 Intel® Volume Management Device (VMD) Yes Security & Reliability Intel® AES New Instructions Yes Intel® Trusted Execution Technology ‡ Yes Intel® Run Sure Technology 4 Yes	Intel® 64 ‡	Yes			
Intel® Volume Management Device (VMD)     Yes       Security & Reliability     Yes       Intel® AES New Instructions     Yes       Intel® Trusted Execution Technology ‡     Yes       Intel® Run Sure Technology     Yes	Instruction Set Extensions	Intel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512			
Security & Reliability       Intel® AES New Instructions     Yes       Intel® Trusted Execution Technology ‡     Yes       Intel® Run Sure Technology     Yes	# of AVX-512 FMA Units	2			
Intel® AES New Instructions     Yes       Intel® Trusted Execution Technology ‡     Yes       Intel® Run Sure Technology     Yes	Intel® Volume Management Device (VMD) Yes				
Intel® Trusted Execution Technology ‡   Yes     Intel® Run Sure Technology   Yes	Security & Reliability				
Intel® Run Sure Technology Yes	Intel® AES New Instructions	Yes			
	Intel® Trusted Execution Technology ‡	Yes			
Mode based Execute Centrel (MRE)	Intel® Run Sure Technology	Yes			
	Mode-based Execute Control (MBE)	Yes			