ADLD25PC - Intel® Atom™ D525 Dual Core, 1.80GHz

Features

- Intel Atom Dual Core Processor D525, 1.80GHz
- Up to 4GB DDR3-800 DRAM SoDIMM204
- Type 2 Bottom-Stacking PCI/104 Express – 4 x1 Lanes
- 2x SATA 300 Ports
- 1x 10/100/1000Mbit Ethernet LAN Port
- 4x COM Ports - 2x RS232 Ports, 2x RS232/422/485 Ports
- 8x USB2.0 Ports
- Onboard VGA and LVDS Ports
- Hardware Monitor
- Watchdog Timer
- Optional PCIe Mini Socket
- Windows XP, Windows CE
- 7.1 HD Audio
- 16bit GPIO Port
- Operating Range -25° to +70° C (-40° to +85° C available - call sales for details)
- 3.6" x 3.8" (90mm x 96mm) PCI/104-Express v1.0a Form Factor



Ordering Information

Item Code	Part #	Description
ADLD25PC-525	292500	Intel Atom Dual Core CPU D525, 1.80GHz
Memory		
DDR3-DRAM1024-S	997025	DDR3-1066 1GB Standard Temperature
DDR3-DRAM2048-S	997125	DDR3-1066 2GB Standard Temperature
DDR3-DRAM4096-S	997345	DDR3-1066 4GB Standard Temperature
DDR3-DRAM-1024-EX	997027	DDR3-1066 1GB Extended Temperature
DDR3-DRAM-2048-EX	997127	DDR3-1066 2GB Extended Temperature
DDR3-DRAM-4096-EX	997430	DDR3-1066 4GB Extended Temperature
Options and Accessories		
ADLD25PC-mPCIe	292530	Mini-PCIe option
ADL-ET	290000	Extended Temp Screen (-40° to +85° C)
ADLD25PC-CK	292520	Standard Cable kit for ADLD25PC
STANDOFF-MSS	293406	.6" (15.24mm), PC/104 M3, Precision Milled Stand-Offs
STANDOFF-1"M3	293436	1" (25.4mm), PC/104 M3, Precision Milled Stand-Offs
Thermal Solutions		
ADLD25PC-SP0600	292513	0.600" Heat Spreader for ADLD25PC
ADLD25PC-SP1000	292514	1.000" Heat Spreader for ADLD25PC
For the above two Thermal Solutions, ADL recommends Stand-Off part #'s 293406 or 293436 (qty. 4 each)		
ADLD25PC-FANSINK	292511	Heatsink / Fan combo for ADLD25PC
ADLD25PC-PASSIVELP	292512	Passive LP for ADLD25PC

Description

The ADLD25PC features the Intel Atom D525 processor which is designed for a two-chip platform as opposed to the traditional three-chip platforms requiring a CPU, GMCH and ICH. The Atom D525 processor accomplishes this by locally integrating the graphics and memory controller functions of a traditional GMCH. The processor interfaces to the ICH9M-E, which is also used on the ADLGS45PC and provides similar PCI/104-Express I/O bandwidth necessary to enable performance-based rugged, portable and thermally constrained applications. The D525 have an Intel rated Thermal Design Power (TDP) maximum of 10 to 13 Watts; and an Intel idle TDP of 4 to 4.8 Watts. TDP refers to how much heat annotated in Watts a thermal solution must be able to dissipate while keeping the processor below its maximum die temperature.

The ADLD25PC is ideal for rugged and mobile applications where power consumption is critical. These jobs include deeply embedded enclosures for industrial applications, as well as rugged portable applications such as transceivers for tactical communication, GIS mapping, night vision applications, railway and other applications that often use battery-type power sources.

In addition to the wide range of rugged, extended temperature or harsh environment applications in which the ADLD25PC can excel, it also supports a healthy set of features. The ADLD25PC has a discrete 16-bit digital I/O port as well as a separate LPT port. The ADLD25PC also has four COM ports. While two of the ports support RS232, the other two are configurable to RS232 or 4-wire RS422/485. 2x SATA with RAID support, 8x USB2.0, and bottom-stacking PCI express 4 x1 lanes are just a few of the available features. The ADLD25PC has an option for the PCIe Mini Socket to be added for expandability, (i.e. Wi-Fi / Bootable Flash Drive).

ADL Embedded Solutions offers highly effective active and passive thermal solutions designed for this product. Contact your sales representative for more information.

Data subject to change without notice.

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Technical Specifications - ADLD25PC

FEATURE	FUNCTION	REMARKS	OPTIONS
CPU			
CPU Classes	Intel Atom D525		D525 - Dual Core
CPU Option / Performance (G/MHz) / L2 Cache	Atom D525 / 1.8GHz / 1MB		D425 option available. Please discuss your requirements with your sales engineer.
Max. No. of Cores	2	Both processor options support Hyperthreading	
Soldered (or Socket Name)	Soldered		
FSB	N/A	FSB only applicable with separate GMCH	
Chipset			
North Bridge (GMCH)	Dx25	GMCH functions incorporated into Dx25	
South Bridge (ICH)	Intel ICH9M-E		
Super IO1	SMSC SCH3114		
Hardware Monitoring	Super IO		
Memory			
Type	SODIMM204-1,5V / DDR3		
Size max (MB)	4096MB		1024MB / 2048MB
Speed max	DDR3 800MHz		
Graphic			
Controller	CPU integrated		
Video BIOS	Intel Extreme BIOS		
Memory	max. 8MB UMA / max. 256MB DVMT		
CRT	Yes		
CRT resolution	2048x1536		
DVI/HDMI/DisplayPort	N/A		
LCD LVDS 18/24/36/48	18 Bit supported		
LCD resolution	1600x1200		
BIOS			
Manufacturer	Solomon Award		
BIOS Chip	SPI-Flash		
Power Management APM/ACPI	APM/ACPI		
Speedstep/AMT	No		
Powerstates S0/S1/S3/S4/S5	S0/S4/S5		
Audio			
Controller and Codec	Dx25 / Realtek ALC889 (HDA)		
Support for 2/6/8 channel (2.0/5.1/7.1)	2/6/8 channel		
Analog In Line/CD/AUX/Mic1/Mic2/PCBeep	Line-In/Mic1/Mic2/PCBeep		
Analog Out Line/Monoout	Analog Line-Out		
Digital In/Out	S/PDIF In/Out		

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Technical Specifications - ADLD25PC

FEATURE	FUNCTION	REMARKS	OPTIONS
LAN			
LAN1 Controller	Intel ICH9M-E / 567 Phy		
LAN1 10/100/1000	10/100/1000 Mbit		
LAN1 Diskless Boot option RPL/PXE/WOL	RPL/PXE/WOL		
LAN2 Controller	None		
Buses			
PCI	PC/104-Plus V2.0		
PCIe x1 / x4 / x16	PCIe/104 V1.1 (PCIe v2.0)		
Specials/Options	mini-PCIe V1.2	Please call for compatibility	292530
ATA/SATA Interfaces			
ATA primary/secondary	None		
SATA Channels	2		
SATA RAID Levels 0/1/5/10	0/1		
1.5Gbs/3.0Gbs/6.0Gbs	1.5Gbs/3.0Gbs		
Onboard Compact Flash / Solid State Disk	None		
USB Interfaces			
Boot HD/FDD/CDROM/FD/ZIP	HD/FDD/CDROM/FD/ZIP		
USB-Channels	8		
Protocols - USB 1.1/2.0/Host/Device	1.1/2.0/Host		
Serial Interfaces			
COM1&2: TTL/RS232/RS485/RS422	RS232		
COM3&4: TTL/RS232/RS485/RS422	RS232/422/485	BIOS Selectable	
RS232 max Speed	RS232 - 250kbps / 422/485 - 10Mbps		
Parallel Interfaces			
LPT Uni/ECP/EPP/FDC	Uni/ECP/EPP/FDC		
Specials/Options	16-Bit GPIO	Discrete port	
Interfaces			
PS/2 Keyboard/Mouse	Yes		
Floppy Interface FDC	Shared with LPT Port		
Watchdog	Yes		
Power Supply			
Supply Voltage	5V		
Power Normal (typical)*	TBD		
UPS/Pb-Batt	None		
Cooling	passive / active		
Operating Temperature (ambient)	-25 to 70 °C	ADL thermal solution recommended	
Extended Temperature	-40 to 85° C	Requires ADL-ET and Approved Thermal solution	
Storage Temp.	-40 to 85 °C		
Dimensions	3.6" x 3.8" (90mm x 96mm)		

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