



### 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



Now Shipping!

#### Ordering Information

| Item Code   | Part # | Description   |
|---|--------|---|
| ADLD25PC-525  | 292500 | Intel Atom Dual Core CPU D525, 1.80GHz                |
| <b>Memory</b>   |        |   |
| 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                    |
| <b>Options and Accessories</b>  |        |   |
| 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   |
| <b>Thermal Solutions</b>  |        |   |
| 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.

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### Technical Specifications - ADLD25PC

| FEATURE                                     | FUNCTION                       | REMARKS                                       | OPTIONS   |
|---|--------------------------------|---|---|
| <b>CPU</b>                                  |                                |   |   |
| 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        |   |
| <b>Chipset</b>                              |                                |   |   |
| North Bridge (GMCH)                         | Dx25                           | GMCH functions incorporated into Dx25         |   |
| South Bridge (ICH)                          | Intel ICH9M-E                  |   |   |
| Super IO1                                   | SMSC SCH3114                   |   |   |
| Hardware Monitoring                         | Super IO                       |   |   |
| <b>Memory</b>                               |                                |   |   |
| Type  | SODIMM204-1.5V / DDR3          |   |   |
| Size max (MB)                               | 4096MB                         |   | 1024MB / 2048MB   |
| Speed max                                   | DDR3 800MHz                    |   |   |
| <b>Graphic</b>                              |                                |   |   |
| 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                      |   |   |
| <b>BIOS</b>                                 |                                |   |   |
| 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                       |   |   |
| <b>Audio</b>                                |                                |   |   |
| 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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| FEATURE                                  | FUNCTION                           | REMARKS                                       | OPTIONS |
|--|------------------------------------|---|---------|
| <b>LAN</b>                               |                                    |   |         |
| 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                               |   |         |
| <b>Buses</b>                             |                                    |   |         |
| 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  |
| <b>ATA/SATA Interfaces</b>               |                                    |   |         |
| 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                               |   |         |
| <b>USB Interfaces</b>                    |                                    |   |         |
| 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                       |   |         |
| <b>Serial Interfaces</b>                 |                                    |   |         |
| 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 |   |         |
| <b>Parallel Interfaces</b>               |                                    |   |         |
| LPT Uni/ECP/EPP/FDC                      | Uni/ECP/EPP/FDC                    |   |         |
| Specials/Options                         | 16-Bit GPIO                        | Discrete port                                 |         |
| <b>Interfaces</b>                        |                                    |   |         |
| PS/2 Keyboard/Mouse                      | Yes                                |   |         |
| Floppy Interface FDC                     | Shared with LPT Port               |   |         |
| Watchdog                                 | Yes                                |   |         |
| <b>Power Supply</b>                      |                                    |   |         |
| Supply Voltage                           | 5V                                 |   |         |
| Power Normal (typical)*                  | TBD                                |   |         |
| UPS/Pb-Batt                              | None                               |   |         |
| <b>Cooling</b>                           |                                    |   |         |
|  | 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                       |   |         |
| <b>Dimensions</b>                        |                                    |   |         |
|  | 3.6" x 3.8" (90mm x 96mm)          |   |         |

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