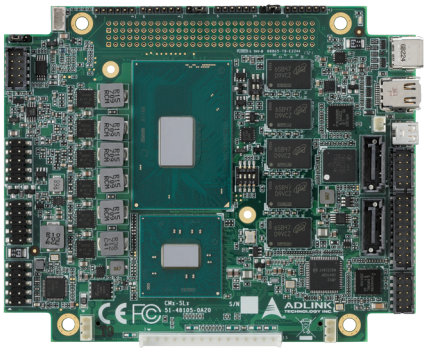
ADLINK
LEADING EDGE COMPUTING

PCI/104-Express Type 1 Single Board Computer
with 6th Gen. Intel® Core™ Processor

# CMx-SLx

Datasheet



PC104

## Features

- 6th Gen. Intel® Core™ Processor
- Up to 16GB DDR4-ECC soldered memory
- 3x DDI channels, 1x micro HDMI, 1x mini DP and 1x 18/24 bit single channel LVDS
- 4x PCIe x1 and 1x PCIe x16 (PEG) configurable as 1x PCIe x16 or 2x PCIe x8 or 1x PCIe x8 + 2x PCIe x4
- 2x GbE LAN, 2x SATA 6Gb/s, 1x USB 3.1, 6x USB 2.0 (2x to PCIe/104 bus connector), 2x COM, 8x GPIO
- Featuring SEMA® for easy integration of Hardware monitoring and control
- Extreme Rugged operating temperature -40°C to +85°C (build by BOM options)

## Specifications

| | | |
|---|---|---|
| Processor & System | CPU | 6th generation Intel® Processor (formerly Skylake)<br>Intel® Core™ i3-6102E 1.9GHz (no Turbo), 25W (2C/GT2)<br>Intel® Core™ i3-6100E 2.7GHz (no Turbo), 35W (2C/GT2)<br>Intel® Core™ i7-6822EQ 2.0/2.8GHz (Turbo), 25W (4C/GT2)<br>Intel® Xeon® E3-1505L v5 2.0/2.8GHz (Turbo), 25W (4C/GT2) |
| | PCH | Intel® CM236 (supports ECC memory, Intel® AMT) |
| | Memory | Up to 16GB single channel 1866/2133 MHz DDR4-ECC soldered memory |
| | Onboard Storage | Soldered 8GB SLC SATA-SSD<br>Depending on application requirements, variants with following processors can be offered:<br>16GB SLC/MLC<br>32GB SLC/MLC<br>64GB MLC |
| | Embedded BIOS | AMI EFI with CMOS backup in 16MB SPI BIOS with Intel® AMT 11.00 support |
| | Cache | 3MB for Core™ i3 (Option: 8MB for Xeon® processor) |
| | Expansion Busses | PCI/104-Express Type 1 (stack-down)<br>PCI-104 (stack-down) |
| Audio | Chipset | Intel® HD Audio integrated in chipset<br>available on “DisplayPort” and “HDMI” ports |



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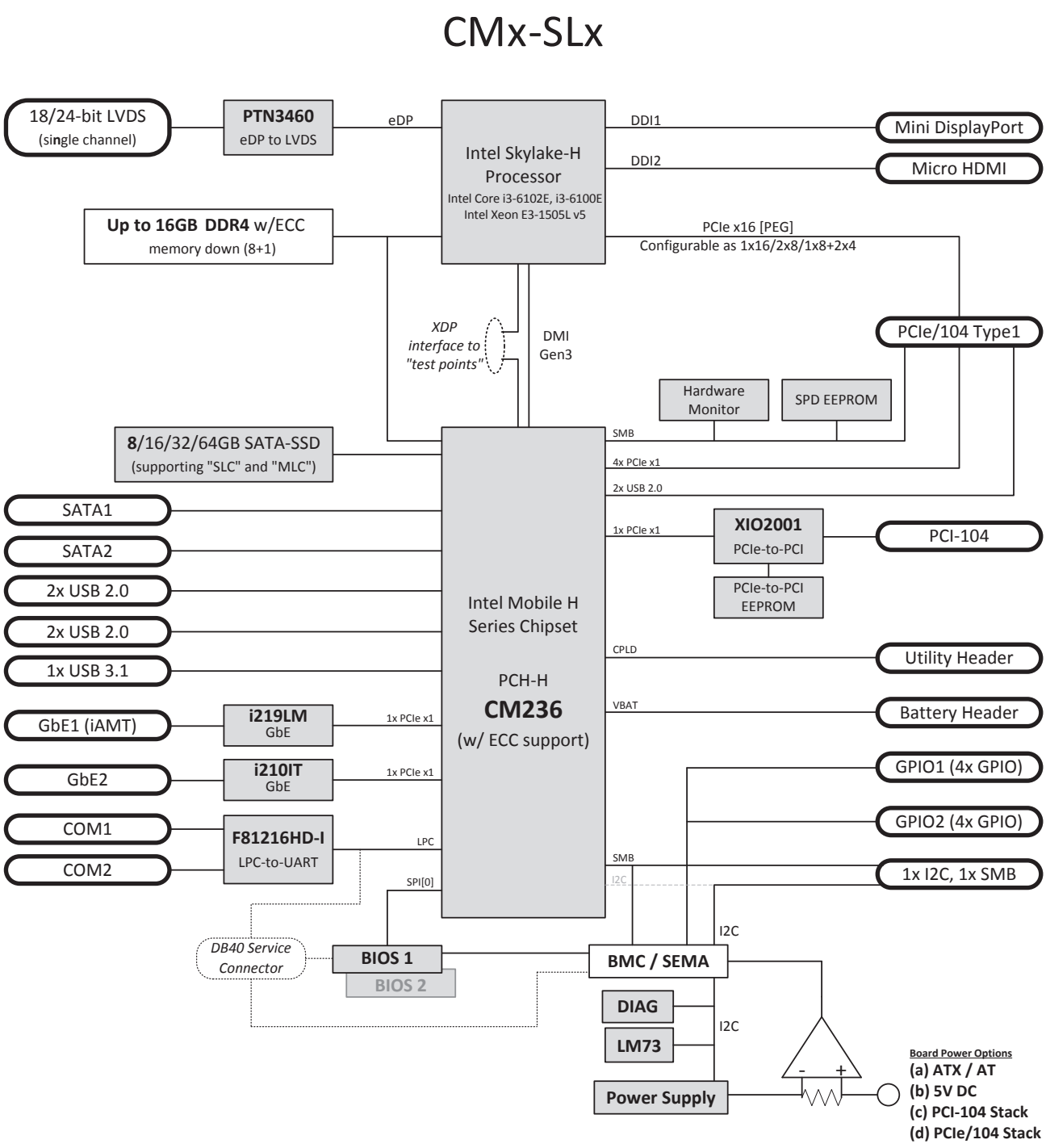
## Specifications

| | | |
|---|---|---|
| Ethernet | Intel® MAC/PHY | 1x Intel® MAC/PHY: i219LM/V (LM with AMT 11.0 support)<br>1x Intel® MAC/PHY: i210IT |
| | Interface | 10/100/1000 GbE connection |
| | TPM | TPM supported by BIOS |
| | Video | GPU Feature Support<br>Intel® Generation 9 LP Graphics Core Architecture, supporting 3 independent and simultaneous display combinations of DisplayPort/HDMI/LVDS |
| | Hardware encode/ transcode | HD content (including HEVC) DirectX 12, DirectX 11.2, DirectX 11.1, DirectX 11, DirectX 10.1, DirectX 10, DirectX 9 support<br>OpenGL 4.4/4.3 and ES 2.0 support<br>OpenCL 2.1, 2.0/1.2 support |
| | Digital Display Interface | DDI1/2 supporting DisplayPort/HDMI |
| | LVDS | Single channel 18/24-bit LVDS from eDP-to-LVDS IC |
| I/O Interfaces | USB | 1x USB 3.1 and 6x USB 2.0 (2x USB 2.0 to PCIe/104 bus connector) |
| | SATA | 2x SATA 6Gb/s and 1x SATA to onboard SATA-SSD |
| | Serial | 2x RS-232 |
| | GPIO | 8x |
| | SMBus | 1x |
| | I2C | 1x |
| Power | Standard Input | ATX = 5V±5% / 5Vsb ±5% or AT = 5V±5% |
| | Optional Input | Depending on customer application and processor, “5VDC single voltage supply” variant can be offered. |
| | Management | ACPI 5.0 compliant |
| | Power States | C1-C6, S0, S1, S3, S4, S5, S5 ECO mode (Wake-on-USB S3/S4, WOL S3/S4/S5) |
| | ECO mode | Supports deep S5 for power saving |
| Operation System | Standard Support | Windows 10 (64-bit), Windows 7 (32/64-bit), Linux YOCTO 64-bit, VxWorks 7 (64-bit), QNX 6.6 |
| Mechanical and Environmental | Form Factor | PCI/104-Express Specification, Version 3.0 |
| | Dimension | 117.4 mm x 96 mm |
| | Operating Temperature | Standard: 0°C to +60°C<br>Extreme Rugged: -40ºC to +85ºC |
| | Humidity | 5-90% RH operating, non-condensing<br>5-95% RH storage (and operating with conformal coating) |
| | Shock and Vibration | IEC 60068-2-64 and IEC-60068-2-27<br>MIL-STD-202F, Method 213B, Table 213-I, Condition A and Method 214A, Table 214-I, Condition D |
| | HALT | Thermal Stress, Vibration Stress, Thermal Shock and Combined Test |
| Intelligent Middleware | SEMA® | Local management, control of embedded computer systems<br>Extended EAPI for monitoring, controlling and analytics applications<br>Multiple OS support and across platforms (x86, ARM) |



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## Functional Diagram






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## Ordering Information

| | |
|---|---|
| CM4-SL2-6102E-8G-8G | PCI/104-Express Type 1 SBC, Intel® Core™ i3-6102E (1.9GHz), CM236 chipset, 8GB DDR4-ECC, 8GB SLC SATA-SSD, 0°C to +60°C |
| CM4-SL4-6822E-8G-8G-ETT | PCI/104-Express Type 1 SBC, Intel® Core™ i7-6822EQ (max. 2.8GHz), CM236 chipset, 8GB DDR4-ECC, 8GB SLC SATA-SSD, -40°C to +85°C |

For other CPU, RAM or SATA-SSD configurations, please contact your local sales representative

## Optional Accessories

| | |
|---|---|
| CMx-SLx-X-10 | CMx-SLx Cable Kit |
| CMx-SLx-TM-00 | CMx-SLx Heat Spreader |
| CMx-SLx-TM-10 | CMx-SLx Passive Heat Sink (0°C to +60°C) |
| CMx-SLx-TM-20 | CMx-SLx Active Heat Sink for i3-6102E CPU (-40°C to +85°C) |



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