



Features

- 4th Generation Low Power Intel® Core™ i7/i5/i3 Processor SoC
- Up to 16 GB DDR3L SDRAM at 1600MHz
- Two DDI channels, one LVDS supporting 3 independent displays
- Four PCIe x1 or 1 PCIe x4, Gigabit Ethernet
- Four SATA 6 Gb/s, two USB 3.0, six USB 2.0
- Supports Smart Embedded Management Agent (SEMA) functions
- Extreme Rugged™ operating temperature: -40°C to +85°C (optional)

Specifications

Core System

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|-----|--|
| CPU | 4th Generation Intel® Core™ Processors (Mobile) - 22nm (also known as "Haswell-ULT") Core™ i7-4650U 1.7 GHz (3.3 GHz Turbo), 15W (2C/GT3) Core™ i5-4300U 1.9 GHz (2.9 GHz Turbo), 15W (2C/GT2) Core™ i3-4010U 1.7 GHz (no Turbo) 3MB, 15W (2C/GT2) Celeron® 2980U 1.6 GHz (no Turbo) 15W (2C/GT1) Supports : Intel® VT, Intel® TXT, Intel® SSE4.2, Intel® HT Technology, Intel® 64 Architecture, Execute Disable Bit, Intel® Turbo Boost Technology 2.0, Intel® AVX2, Intel® AES-NI, PCLMULQDQ Instruction, Intel® Secure Key and Intel® TSX Note: Availability of the features may vary between processor SKUs. |
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|-----------------------|---|
| Memory | Dual channel non-ECC 1600/1333 MHz DDR3L memory up to 16GB in dual SODIMM socket |
| Embedded BIOS | AMI EFI with CMOS backup in 8MB SPI BIOS with Intel® AMT 9.0 support |
| L3 Cache | 4MB for i7-4650U, 3MB for i5-4300U and i3-4010U; 2MB for 2980U |
| Expansion Busses | 4 PCI Express x1: lanes 0/1/2/3 LPC bus, SMBus (system), I²C (user) |
| SEMA Board Controller | Supports : Voltage/Current monitoring, Power sequence debug support, AT/ATX mode control, Logistics and Forensic information, Flat Panel Control, General Purpose I²C, Failsafe BIOS (dual BIOS), Watchdog Timer and Fan Control |
| Debug Headers | 40-pin multipurpose flat cable connector Use in combination with DB-40 debug module Providing BIOS POST code LED, BMC access, SPI BIOS flashing, power testpoints, debug LEDs 60-pin XDP header for ICE debug of CPU/Chipset |

Video

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|---------------------------|--|
| GPU Feature Support | Generation 7.5 graphics core architecture, supporting 3 independent and simultaneous display combinations of DisplayPort/ HDMI/ LVDS monitors Encode/transcode HD content |
| LVDS | Single/dual channel 18/24-bit LVDS from eDP (two lanes) |
| Digital Display Interface | DDI1 supporting DisplayPort / HDMI / DVI DDI2 supporting DisplayPort / HDMI / DVI |

Audio

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| Chipset | Intel® HD Audio integrated in SOC |
| Audio Codec | Located on carrier Express-BASE6 (ALC886 standard supported) |

Ethernet

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|--------------------------|--|
| Intel® MAC/PHY Interface | i218LM (Enterprise SKU) with AMT 9.0 support 10/100/1000 GbE connection |
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I/O Interfaces

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| USB | 2x USB 3.0 (USB 0,1) and 6x USB 2.0 (USB2,3,4,5,6,7) |
| SATA | Four ports SATA 6Gb/s (SATA0, SATA1, SATA2, SATA3) |
| Serial | 2 UART ports COM1/2 with console redirection |
| GPIO | 4 GPO and 4 GPI with interrupt |

Super I/O

On carrier if needed (standard support for W83627DHG-P)

TPM (optional)

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| Chipset | Atmel AT97SC3204 |
| Type | TPM 1.2 |

Power

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|----------------|--|
| Standard Input | ATX = 12V±5% / 5Vsb ±5% or AT = 12V±5% |
| Wide Input | ATX = 5-20 V / 5Vsb ±5% or AT = 5-20V |
| Management | ACPI 4.0 compliant, Smart Battery support |
| Power States | C1-C6, S0, S1, S4, S3, S5, S5 ECO mode (Wake on USB S3/S4, WOL S3/S4/S5) |
| ECO mode | Supports deep S5 mode for power saving |

Mechanical and Environmental

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| Form Factor | PICMG COM.0 : Rev 2.1 Type 6 |
| Dimension | Compact size: 95 mm x 95 mm |
| Operating Temperature | Standard: 0°C to +60°C Extreme Rugged™: -40°C to +85°C (optional) |
| Humidity | 5-90% RH operating, non-condensing 5-95% RH storage (and operating with conformal coating) |
| Shock and Vibration | IEC 60068-2-64 and IEC-60068-2-27 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 |

Operating Systems

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| Standard Support | Windows 7/8 32/64-bit, Linux 32/64-bit |
| Extended Support (BSP) | WES7/8, Linux, VxWorks |

Functional Diagram



Ordering Information

Modules

| Model Number | Description/Configuration |
|-----------------------------|---|
| cExpress-HL-i7-4650U | COM Express® Compact Size Type 6 Module with Intel® Core™ i7-4650U at 1.7 GHz with GT3 level graphics |
| cExpress-HL-i5-4300U | COM Express® Compact Size Type 6 Module with Intel® Core™ i5-4300U at 1.9 GHz with GT2 level graphics |
| cExpress-HL-i3-4010U | COM Express® Compact Size Type 6 Module with Intel® Core™ i3-4010U at 1.7 GHz with GT2 level graphics |
| cExpress-HL-2980U | COM Express® Compact Size Type 6 Module with Intel® Celeron® 2980u with 1.6GHz ULV 15W 2+1F and HD graphics |

Accessories

| Model Number | Description/Configuration |
|--------------------------|--|
| Heat Spreaders | |
| HTS-cHL-B | Heatspreader for cExpress-HL with threaded standoffs for bottom mounting |
| HTS-cHL-BT | Heatspreader for cExpress-HL with through hole standoffs for top mounting |
| Passive Heatsinks | |
| THS-cHL-B | Low profile heatsink for cExpress-HL with threaded standoffs for bottom mounting |
| THS-cHL-BT | Low profile heatsink for cExpress-HL with through hole standoffs for top mounting |
| THSH-cHL-B | High profile heatsink for cExpress-HL with threaded standoffs for bottom mounting |
| Active Heatsink | |
| THSF-cHL-B | High profile heatsink with Fan for cExpress-HL with threaded standoffs for bottom mounting |

Note: All specifications are subject to change without further notice.



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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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