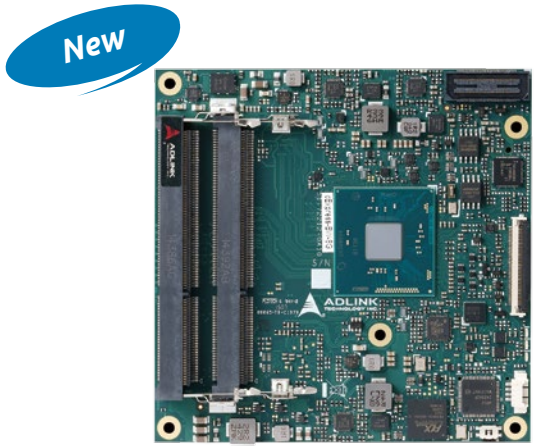
cExpress-BW

COM Express Compact Size Type 6 Module with Intel® Pentium®, Celeron® N3000 Series and Atom™ X5-E8000 SoC

Features



- Dual, quad-core Intel® Pentium®, Celeron® N3000 Series and Atom™ X5-E8000 SoC
- Up to 8 GB Dual Channel DDR3L at 1600MHz
- Three DDI channels, one eDP, (shared with DDI3) 3 independent displays (build option) LVDS in place of eDP
- Three PCIe x1 (five PCIe x1 with bridge)
- GbE, two SATA 6 Gb/s (build option onboard SSD), four USB 3.0/2.0, four USB 2.0
- Smart Embedded Management Agent (SEMA®) functions

Specifications

Core System

CPU

Dual or quad-core Intel® Pentium®, Celeron® N3000 Series and Atom™ SoC, 14nm process (formerly "Braswell")

Intel® Pentium® N3710, 1.6/2.56 (Burst) GHz, 400/700 (Turbo), 6W (4C)

Intel® Celeron® N3160, 1.6/2.24 (Burst) GHz, 320/640 (Turbo), 6W (4C)

Intel® Celeron® N3060, 1.6/2.48 (Burst) GHz, 320/600 (Turbo), 6W (2C)

Intel® Celeron® N3010, 1.04/2.24 (Burst) GHz, 320/600 (Turbo), 4W (2C)

Intel® Atom™ X5-E8000, 1.04/2.0 (Burst) GHz, 320 (no Turbo), 5W (4C)

Memory

Dual channel non-ECC 1600/1333 MHz DDR3L memory up to 8GB in dual SODIMM socket

Embedded BIOS

AMI EFI with CMOS backup in 8MB SPI BIOS

Cache

2MB for Pentium®, Celeron® and Atom™

Expansion Busses

3x PCIe x1: Lanes 0/1/2 (build option 5x PCIe x1 with bridge)

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 for DB-40 debug module providing BIOS POST code LEDs, BMC access, SPI BIOS flashing, power testpoints, debug LEDs

60-pin XDP header for ICE debug of CPU

Audio

Chipset

Intel® HD Audio integrated in SoC

Audio Codec

On Express-BASE6 carrier (ALC886 standard support)

Ethernet

MAC/PHY: Intel® Ethernet Controller i211AT

Interface: 10/100/1000 GbE connection

Video

Supports

3 independent and simultaneous display combinations of DisplayPort/HDMI/eDP monitors (optional LVDS in place of eDP)

GPU Feature Support

Encode/transcode of HD video content

Supports 3D rendering, media compositing and video encoding

Full hardware acceleration for decode of HEVC, H.264, SVC, VP8, VP9, MPEG4, AVS, H.263

Full hardware acceleration for encode of H.264, SVC, VP8, VP9, AVS, H.263

Supports content protection using PAVP2.0, HDCP 1.4/2.1 and Media Vault DRM

DirectX 11.1 support

OpenGL 4.2, ES 3.0 and OpenCL 1.2 support

Note: Availability of features dependent on operating system.

LVDS/eDP

eDP support (shared with DDI3)

Single/dual channel 18/24-bit LVDS (build option in place of eDP)

Digital Display Interface

DDI1 supporting DisplayPort/HDMI

DDI2 supporting DisplayPort/HDMI

DDI3 supporting DisplayPort/HDMI (shared with LVDS/eDP)

Note: Only two simultaneous HDMI outputs supported.

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Note: "Build option" indicates an alternative BOM configuration to support additional or alternative functions that are not available on the standard product. Be aware that part numbers for SKUs with "build options" will need to be created and may cause production lead times.

Specifications

I/O Interfaces

USB: 4x USB 1.1/2.0/3.0 (USB 0,1,2,3) and 4x USB 1.1/2.0 (USB 4,5,6,7, port 4-7 from USB hub)

SATA: 2x SATA 6Gb/s (SATA0, SATA1)

Optional onboard SSD (8/16/32GB) in place of SATA1 port

Serial: 2 UART ports COM 1/2 (COM 1 supports console redirection)

GPIO/SD: 4 GPO and 4 GPI

SD muxed with GPIO, switched by BIOS setting

Super I/O

Supported on carrier if needed (standard support for W83627DHG-P)

TPM

Chipset: Atmel AT97SC3204

Type: TPM 1.2

Power

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 5.0 compliant, Smart Battery support

Power States: C1-C6, S0, S3, S4, 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

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

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

Standard Support

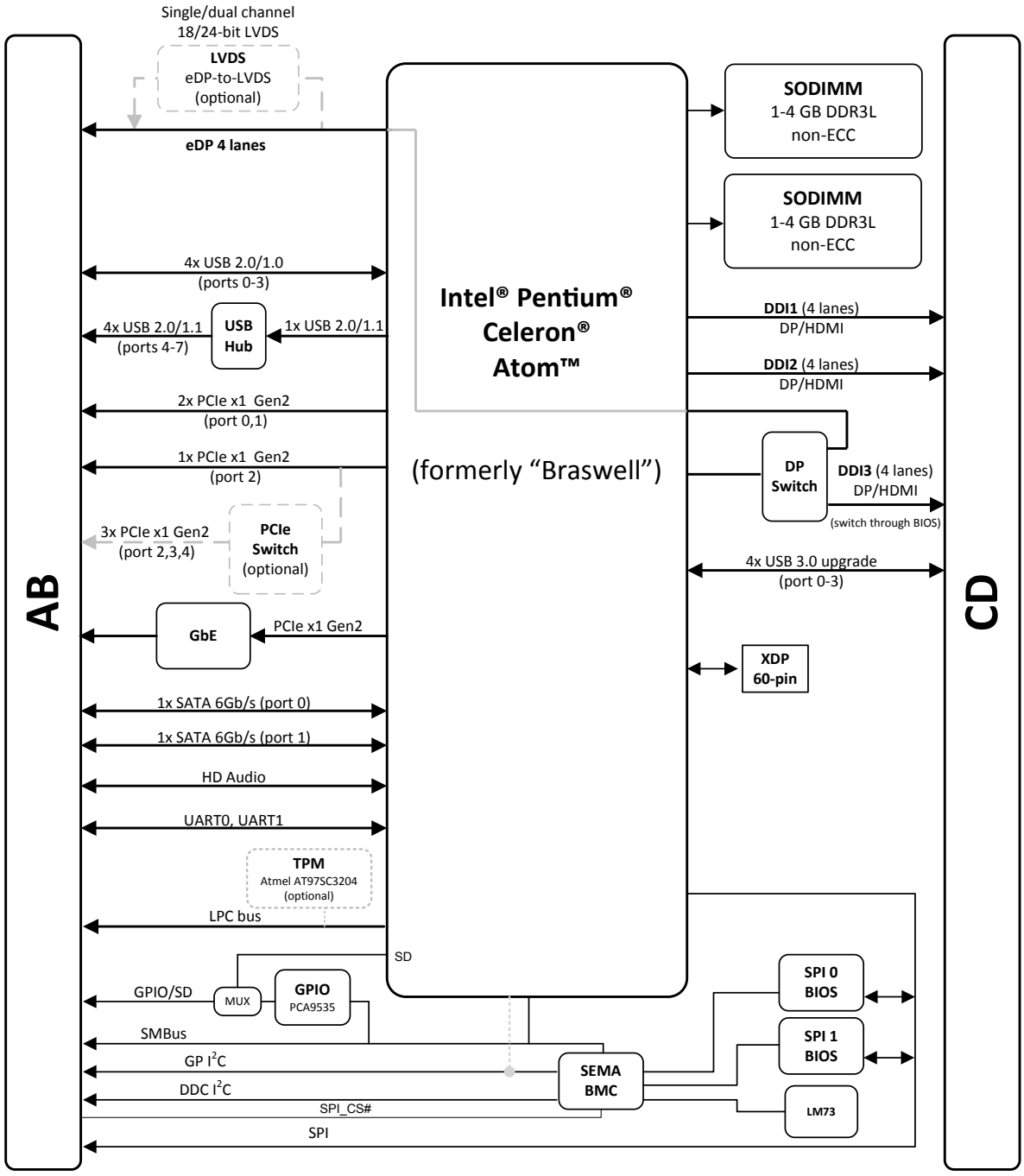
Windows 10/8.1 64-bit, Windows7 32/64-bit, Linux 32/64-bit

Extended Support (BSP)

WES7 32/64-bit, Linux 32/64-bit, VxWorks 32-bit

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Functional Diagram



Ordering Information

- **cExpress-BW-N3710**
  COM Express Compact size Type 6 module with Intel® Pentium® N3710 at 1.6/2.56 (Burst) GHz
- **cExpress-BW-N3160**
  COM Express Compact size Type 6 module with Intel® Celeron® N3160 at 1.6/2.24 (Burst) GHz
- **cExpress-BW-N3060**
  COM Express Compact size Type 6 module with Intel® Celeron® N3060 at 1.6/2.48 (Burst) GHz
- **cExpress-BW-N3010**
  COM Express Compact size Type 6 module with Intel® Celeron® N3010 at 1.04/2.24 (Burst) GHz
- **cExpress-BW-x5-E8000**
  COM Express Compact size Type 6 module with Intel® Atom™ x5-E8000 at 1.04/2.0 (Burst) GHz

Accessories

Heat Spreaders

- **HTS-cBW-B**
  Heatspreader for cExpress-BW with threaded standoffs for bottom mounting
- **HTS-cBW-BT**
  Heatspreader for cExpress-BW with through hole standoffs for top mounting

Passive Heatsinks

- **THS-cBW-B**
  Low profile heatsink for cExpress-BW with threaded standoffs for bottom mounting
- **THS-cBW-BT**
  Low profile heatsink for cExpress-BW with through hole standoffs for top mounting
- **THSH-cBW-B**
  High profile heatsink for cExpress-BW with threaded standoffs for bottom mounting

Active Heatsink

- **THSF-cBW-B**
  High profile heatsink with Fan for cExpress-BW with threaded standoffs for bottom mounting

Starter Kit

- **COM Express Type 6 Starter Kit Plus**
  COM Express formfactor starter kit with Express-BASE6 board, power supply, and accessory kit

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