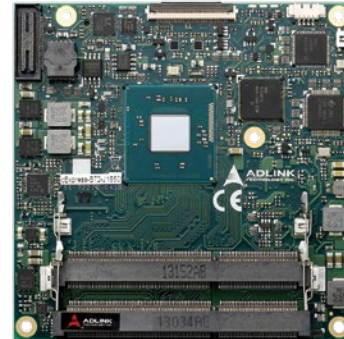


cExpress-BT2

COM Express[®] Compact Size Type 2 Module with Intel[®] Atom[™] E3800 series or Celeron[®] Processor SoC

Features

- Single, dual, quad-core Intel[®] Atom[™] or Celeron[®] Processor SoC
- Up to 8GB Dual Channel DDR3L at 1333MHz
- VGA and dual channel 18/24-bit LVDS
- Two PCIe x1, and 32-bit PCI bus
- GbE, one SATA 3Gb/s, one PATA IDE, seven USB 2.0
- Supports Smart Embedded Management Agent (SEMA[®]) functions
- Extreme Rugged operating temperature: -40°C to +85°C (build option)



Specifications

Core System

CPU	Single, dual, quad-core Intel [®] Atom [™] or Celeron [®] Processor Atom [™] E3845 1.91 GHz 542/792 Gfx (Turbo) 10W Atom [™] E3827 1.75 GHz 542/792 Gfx (Turbo) 8W Atom [™] E3826 1.46 GHz 533/667 Gfx (Turbo) 7W Atom [™] E3825 1.33 GHz 533 Gfx (No Turbo) 6W Atom [™] E3815 1.46 GHz 400 Gfx (No Turbo) 5W Celeron [®] N2930 1.83 GHz, 400/756 Gfx (Turbo) 7.5W Celeron [®] J1900 2 GHz, 688/792 Gfx (Turbo) 10W Supports: Single, dual or quad Out-of-Order Execution (OOE) processor cores, Intel [®] VT-x, Intel [®] SSE4.1 and SSE4.2, Intel [®] 64 architecture, IA 32-bit, PCLMULQDQ Instruction DRNG, Intel [®] Thermal Monitor (TM1 & TM2) Note: Availability of features may vary between processor SKUs.
Memory	Dual channel non-ECC 1333/1066 MHz DDR3L memory up to 8GB in dual stacked SODIMM sockets
Embedded BIOS	AMI EFI with CMOS backup in 8MB SPI BIOS
Cache	Primary 32 KB, 8-way L1 instruction cache and 24 KB, 6-way L1 write-back data cache 2MB for E3845, N2920 and J1900 1MB for E3827, E3826 and E3825 512K for E3815
Expansion Buses	2 PCI Express x1 Gen 2 (AB): lanes 0/1 PCI Bus 33 MHz Rev. 2.3 LPC bus, SMBus (system), I ² C (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 I ² C, 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 test points, debug LEDs 60-pin XDP header for ICE debug of CPU/chipset

Video

GPU Feature Support	7th Gen Intel [®] graphics core architecture with four execution units supporting two independent displays 3D graphics hardware acceleration Supports for DirectX 11, OpenCL 1.1, OpenGL ES Haili/2.0/1.1, OGL 3.2 Video decode hardware acceleration including support for H.264, MPEG2, MVC, VC-1, WMV9 and VP8 formats Video encode hardware acceleration including support for H.264, MPEG2 and MVC formats
VGA	Analog VGA supporting resolutions of up to 2560 x 1600 x 24bpp @60
LVDS	Single/dual channel 18/24-bit LVDS from eDP (two lanes)

Audio

Chipset	Intel [®] HD Audio integrated in SOC
Audio Codec	Located on carrier Express-BASE

Ethernet

Intel [®] MAC/PHY Interface	Intel [®] i210LM (MAC/PHY) Ethernet controller 10/100/1000 GbE connection
--------------------------------------	---------------------------------------------------------------------------------------

I/O Interfaces

USB	7x USB 1.1/2.0 (port 3~6 from USB hub)
SATA	One SATA 3 Gb/s ports (build option 2 ports: lose PATA)
PATA	Single PATA IDE (Master only) through SATA to PATA IC.
eMMC	Build option soldered on-module bootable eMMC flash storage 8 to 32GB, eMMC feature may vary between OS
GPIO	4 GPO and 4 GPI

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

Super I/O

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

TPM

Chipset	Atmel AT97SC3204 (build option)
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 4.0 compliant, Smart Battery support
Power States	C0, C1, C1E, C4, C6 S0, S3, S4, S5 (Wake on USB S3/S4, WOL S3/S4/S5)
ECO mode	Supports deep S5 (ECO mode) for power saving

Mechanical and Environmental

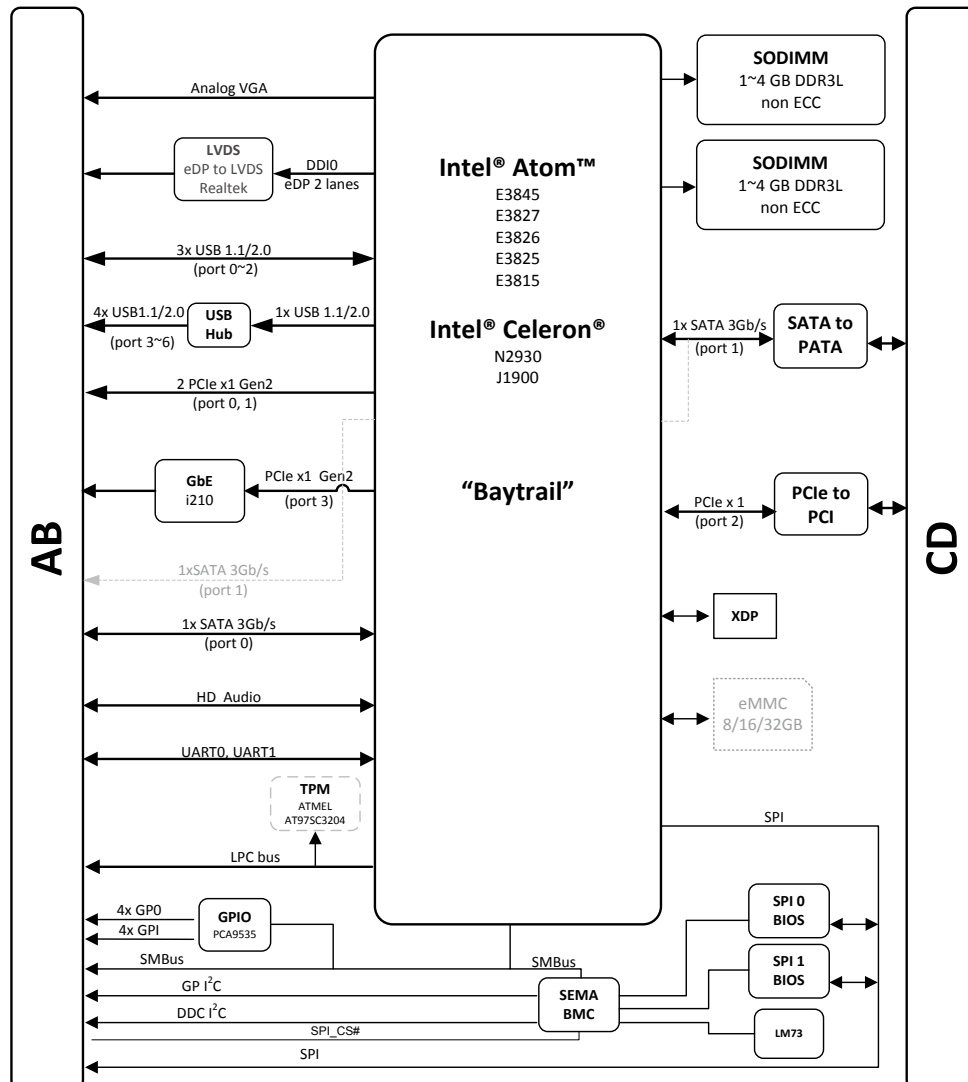
Specification	PICMG COM.0: Rev 2.1 Type 2
Form Factor	Compact size: 95 mm x 95 mm
Operating Temperature	Standard: 0°C to +60°C Extreme Rugged™: -40°C to +85°C (build option, Atom™ E38xx series only)
Humidity	5-90% RH operating, non-condensing 5-95% RH storage (and operating with conformal coating)
Shock 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 7/8 32/64-bit, Linux 32/64-bit
Extended Support (BSP)	WES7/8, Linux, VxWorks 32/64-bit WEC7 32-bit

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.

Functional Diagram



Ordering Information

Modules

Model Number	Description/Configuration
cExpress-BT2-E3845	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3845 at 1.91 GHz
cExpress-BT2-E3827	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3827 at 1.75 GHz
cExpress-BT2-E3826	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3826 at 1.46 GHz
cExpress-BT2-E3825	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3825 at 1.33 GHz
cExpress-BT2-E3815	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3815 at 1.46 GHz
cExpress-BT2-J1900	COM Express® Compact Size Type 2 Module with Intel® Celeron® J1900 at 2.00 GHz
cExpress-BT2-N2930	COM Express® Compact Size Type 2 Module with Intel® Celeron® N2930 at 1.83 GHz

Accessories

Model Number	Description/Configuration
Heat Spreaders	
HTS-cBT2-B	Heatspreader for cExpress-BT2 with threaded standoffs for bottom mounting
HTS-cBT2-BT	Heatspreader for cExpress-BT2 with through hole standoffs for top mounting
Passive Heatsinks	
THS-cBT2-B	Low profile heatsink for cExpress-BT2 with threaded standoffs for bottom mounting
THSH-cBT2-B	High profile heatsink for cExpress-BT2 with threaded standoffs for bottom mounting
Active Heatsink	
THSF-cBT2-B	High profile heatsink with Fan for cExpress-BT2 with threaded standoffs for bottom mounting

Starter Kit

COM Express Type 2 Starter Kit	COM Express formfactor starter kit with Express-BASE board, power supply, and accessory kit
--------------------------------	---------------------------------------------------------------------------------------------