cExpress-BT2

Type 2

NEW

Features

- Single, dual, quad-core Intel® Atom™ or Celeron® Processor System-on-Chip
- 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, eight USB 2.0
- Supports Smart Embedded Management Agent (SEMA) functions
- Extreme Rugged™ operating temperature: -40°C to +85°C (optional)

Specifications

Core System

CPU	Single, dual, quad-core Intel® Atom™ or Celeron® Processor
	Atom™ E3845 1.91 GHz 542/792 Gfx (Turbo) 10W (4C/1333) Atom™ E3827 1.75 GHz 542/792 Gfx (Turbo) 8W (2C/1333) Atom™ E3826 1.46 GHz 533/667 Gfx (Turbo) 7W (2C/1066) Atom™ E3825 1.33 GHz 533 Gfx (No Turbo) 6W (2C/1066) Atom™ E3815 1.46 GHz 400 Gfx (No Turbo) 5W (1C/1066) Celeron® N2930 1.83 GHz, 400/756 Gfx (Turbo) 7.5W (4C/1066) Celeron® J1900 2 GHz, 688/792 Gfx (Turbo) 10W (4C/1333)
	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 Busses	2 PCI Express x1 Gen 2 (AB): lanes 0/1
	PCI Bus 33 MHz Rev. 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 test points, debug LEDs
	60-pin XDP header for ICE debug of CPU/chipset

Video

GPU Feature Support	7th generation 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 Halti/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	Intel® i210 (MAC/PHY) Ethernet controller
Interface	10/100/1000 GbE connection

I/O Interfaces

USB	7x USB 1.1/2.0 (3x from USB hub)
SATA	One SATA 3 Gb/s ports (optionally 2 ports: lose PATA)
PATA	Single PATA IDE (Master only) through Jmicron JM330 SATA to PATA
eMMC	Optional soldered on-module bootable eMMC flash storage 8 to 32GB
SDIO	On-module mini SD card socket
GPIO	4 GPO and 4 GPI with interrupt

Super I/O

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

TPM

Chipset	Atmel AT97SC3204 (optional)
Type	TPM 1.2

Power

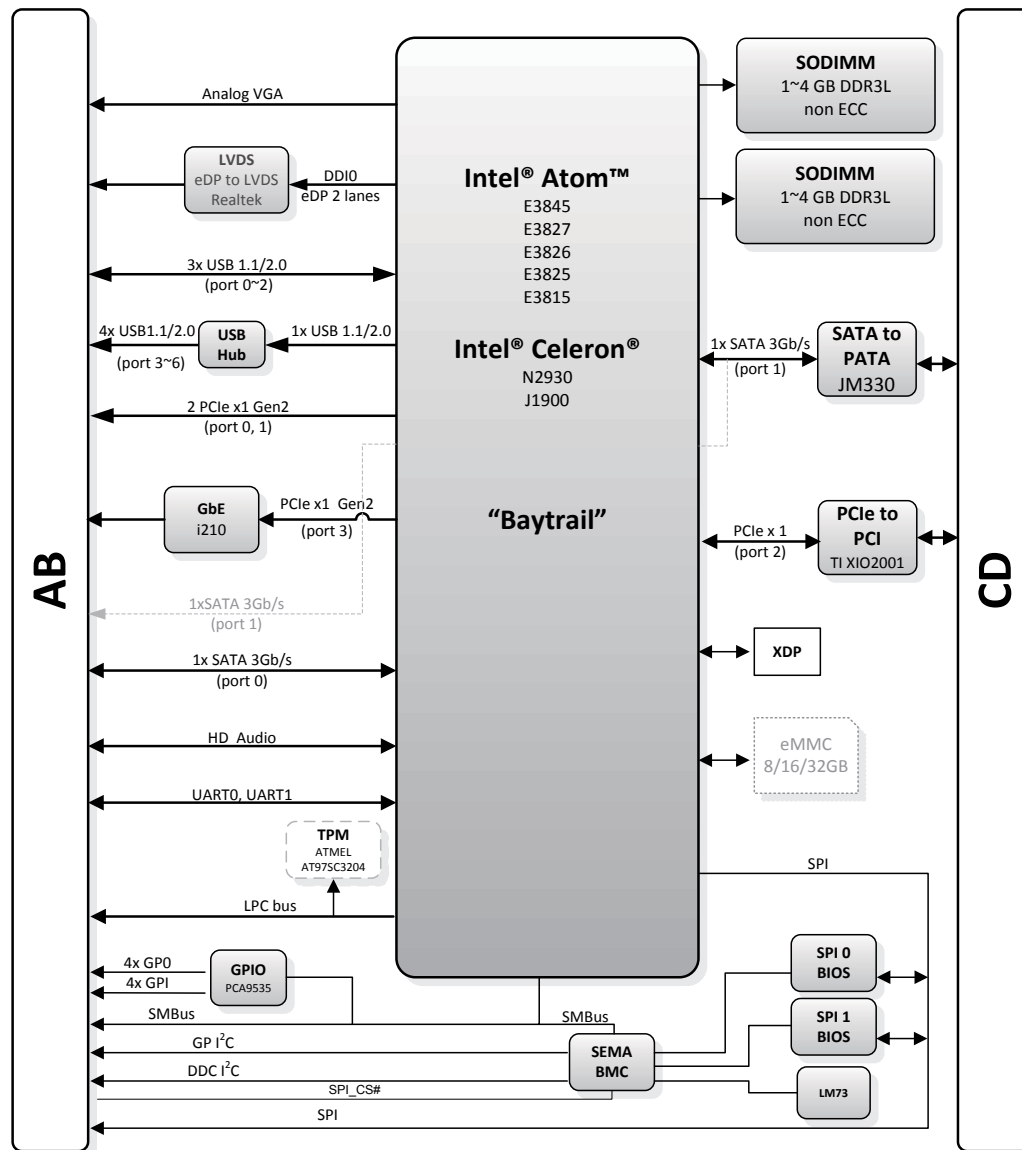|	
Standard Input	ATX = 12V±5% / 5Vsb ±5% or AT = 12V±5%
Wide Input	ATX = 5~20 V / 5Vsb ±5% or AT = 5 ~20V
Management	ACPI 4.0 compliant, Smart Battery support
Power States	C0, C1, C1E, C4, C6 S0, S3, S4, S5 (Wake on USB S3/S4, WOL S3/S4/S5
ECO mode	Supports deep S5 (ECO mode) for power saving

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 (optional, 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, WEC7/8, Linux , VxWorks

Functional Diagram

Analog VGA

LVDS
eDP to LVDS
Realtek

DDI0
eDP 2 lanes

3x USB 1.1/2.0
(port 0~2)

4x USB1.1/2.0
(port 3~6)

USB
Hub

1x USB 1.1/2.0

2 PCIe x1 Gen2
(port 0, 1)

GbE
i210

PCIe x1 Gen2
(port 3)

1xSATA 3Gb/s
(port 1)

1x SATA 3Gb/s
(port 0)

HD Audio

UART0, UART1

TPM
ATMEL
AT97SC3204

LPC bus

4x GP0
4x GPI

GPIO
PCA9535

SMBus

GP I²C

DDC I²C

SPI_CS#

SPI

Intel® Atom™
E3845
E3827
E3826
E3825
E3815

Intel® Celeron®
N2930
J1900

"Baytrail"

SODIMM
1~4 GB DDR3L
non ECC

SODIMM
1~4 GB DDR3L
non ECC

1x SATA 3Gb/s
(port 1)

SATA to
PATA
JM330

PCIe x 1
(port 2)

PCIe to
PCI
TI XIO2001

XDP

eMMC
8/16/32GB

SPI

SPI 0
BIOS

SPI 1
BIOS

SMBus

SEMA
BMC

LM73

AB

CD

Ordering Information

Modules

Model Number	Description/Configuration
cExpress-BT2-E3815	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3815 at 1.46 GHz
cExpress-BT2-E3825	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3825 at 1.33 GHz
cExpress-BT2-E3826	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3826 at 1.46 GHz
cExpress-BT2-E3827	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3827 at 1.75 GHz
cExpress-BT2-E3845	COM Express® Compact Size Type 2 Module with Intel® Atom™ E3845 at 1.91 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
THS-cBT2-BT	Low profile heatsink for cExpress-BT2 with through hole standoffs for top 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 (-40°C to +85°C operation)

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

ADLINK TECHNOLOGY INC.