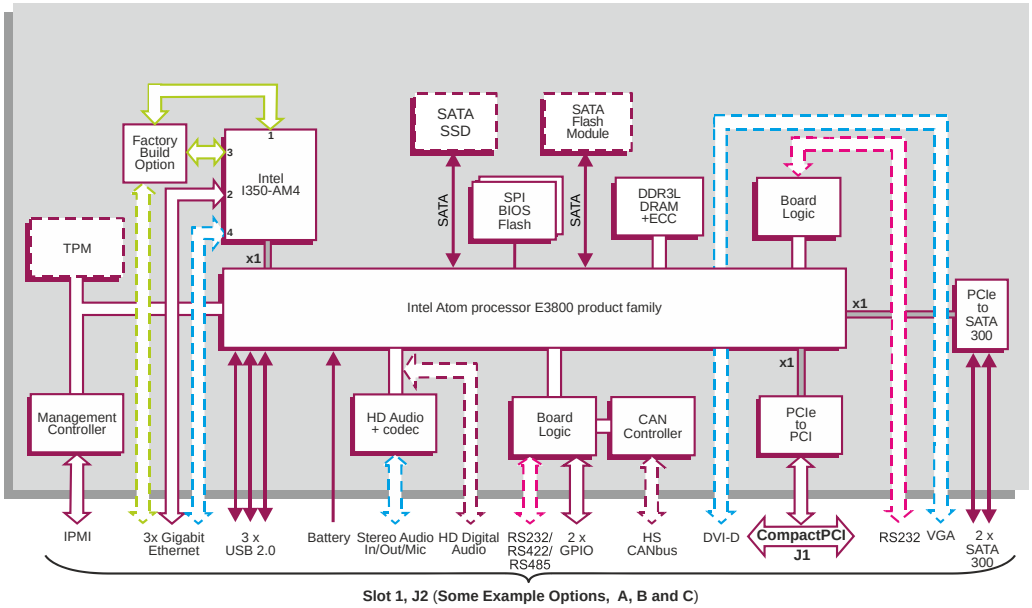
Rugged Conduction-Cooled 3U CompactPCI® board based on Intel® Atom™ Processor E3800

Key Features

TP D2x/msd-RC is a rugged conduction-cooled board suitable for use in a variety of challenging applications and powered by a low power consumption Intel processor. Compatible with legacy TP A41/30x-RC processor boards.

- Intel® Atom™ processor E3800 family:
  - → 4-core and 1-core processor options allowing for performance and power optimizations
- 4 Gbytes DRAM with built in error correction for reliable operation
- Built in I/O interfaces including SATA, USB, Ethernet, graphics, GPIO, audio, CAN and serial
- Option for on-board Flash Drive Module and 2.5-inch drive for local storage
- Board support packages available for Windows®, Linux® and VxWorks®
- Optional Fast Boot solution allows faster start-up times



Slot 1, J2 (Some Example Options, A, B and C)

E.g. Option A = Analog Audio, 1x DVI-D, 1x VGA, 1x GigE (4), 1x RS232
E.g. Option B = Analog Audio, 1x DVI-D, 1x VGA, 1x GigE (4), 1x GigE (3), 1x RS232, 1x RS232
E.g. Option C = Digital Audio, CANbus, 1x VGA, 1x GigE (1), 1x RS232, 1x RS232/422/485

CONCURRENT TECHNOLOGIES

Concurrent Technologies Plc 4 Gilberd Court, Colchester, Essex, CO4 9WN, UK
Tel: +44 (0)1206 752626 Fax: +44 (0)1206 751116

Concurrent Technologies Inc. 400 West Cummings Park, Suite 1300, Woburn, MA 01801, USA
Tel: (781) 933 5900

email:info@gocct.com www.gocct.com

Specification

Rugged CompactPCI SBC
- utilizing Intel® Atom™ processor E3800 product family:
  - → conduction-cooled to ANSI/VITA 30.1-2002
  - → conformally coated

Central Processor
- Intel® Atom™ processor E3800 product family:
  - → 4-core 1.91 GHz Intel® Atom™ processor E3845
  - → 1-core 1.46 GHz Intel® Atom™ processor E3815

DRAM
- 4 Gbytes soldered DDR3L ECC DRAM:
  - → peak bandwidth of 10.6 Gbytes/s
  - → single channel architecture

Mass Storage Interfaces
- 4 x SATA300 interfaces on:
  - → 2 x SATA via J2
  - → 1 x SATA routed to an optional on-board 2.5-inch Mass Storage Drive
  - → 1 x SATA routed to an optional on-board Flash Drive Module

Ethernet Interfaces
- 3 x Gigabit Ethernet interfaces via J2 supporting:
  - → 10BASE-T, 100BASE-TX, 1000BASE-T
- implemented by Intel® I350-AM4 Ethernet Controller

Stereo Audio
- build option for Intel® High Definition Audio interface via J2 supports either:
  - → on-board CoDec provides analog audio (stereo headphone output and microphone input)
  - → or digital audio requiring an external CoDec

Graphics Interface
- analog VGA graphics interface via J2:
  - → resolutions up to 2048 x 1536 @ 16M colors
- DVI-D interface (build option) via J2:
  - → resolutions up to 1920 x 1080 @ 60 Hz

Serial Interfaces
- 1 x RS232 serial port via J2 supporting:
  - → Tx, Rx, RTS, CTS, DSR, DTR, DCD
- 1 x RS232/422/485 port via J2 supporting:
  - → Tx, Rx, RTS, DTR (RS232/422/485 build option)
  - → Tx, Rx, RTS, CTS (RS232 build option)
- 16550 compatible UARTs

Other Peripheral Interfaces
- PC Real Time Clock
- long duration timer; watchdog timer
- 3 x USB 2.0 ports via J2:
- 2 x GPIO signals via J2
- High Speed CANbus interface via J2 (build option)

Flash EPROM
- dual 8 Mbytes of BIOS SPI Flash EPROM

Software Support
- supports Windows®, Linux® and VxWorks®

Firmware Support
- Insyde Software InsydeH20™ BIOS
- optional Fast Boot solution based on the Intel® Firmware Support Package (Intel® FSP)
- Intel® Platform Innovation Framework for EFI
- LAN boot firmware included

Optional Built-In Test (BIT) Support
- Power-on BIT (PBIT), Initiated BIT (IBIT), Continuous BIT (CBIT)

Optional Board Security Features
- Trusted Platform Module (TPM):
  - → build option for either TPM 1.2 or TPM 2.0
- option for Sanitization Utility Software Package
- proprietary board-level security features

CompactPCI Interface
- universal signaling support, compliant with PICMG® 2.0 R3.0; 3.3V or 5V signaling levels
- 33/66 MHz; 32-bit interface via J1
- operates as a System Slot controller (supporting up to 7 peripheral slots) or operates in a Peripheral Slot
- PICMG 2.1 R2.0 Hot Swap Compliant
- user selectable option to disable CompactPCI® interface (Satellite Mode):
  - → receives power from CompactPCI bus
  - → board can be hot swapped

IPMI
- PICMG 2.9 R1.0 (System Management Specification):
  - → implements the IPMB0 interface
- on-board Baseboard Management Controller
- monitors CPU board temperature, voltages
- supports 8 Kbytes of non-volatile memory

Electrical Specification
- typical power consumption is 10W for the 1-core Intel Atom processor E3815 board
- +5V and +3.3V are required:
  - → voltages +5%/-3%

Safety
- PCB (PWB) manufactured with flammability rating of UL94V-0

Environmental Specification
- operating temperature (at card edge):
  - → VITA 47 Class CC4, -40°C to +85°C
- non-operating temperature:
  - → VITA 47 Class C4, -55°C to +105°C
- operating altitude:
  - → -1,000 to 50,000 feet (-305 to 15,240 meters)
- 5% to 95% Relative Humidity, non-condensing
- commercial versions, see separate datasheet:
  - → air-cooled: TP D2x/msd
  - → rear plug compatible

Mechanical Specification
- 3U form-factor: 3.9 inches x 6.3 inches (100mm x 160mm)
- connectors: IEC-1076-4-101 for J1-J2
- operating mechanical:
  - → shock - VITA 47 Class OS2, 40g
  - → random vibration - VITA 47 Class V3, 0.1g²/Hz

Legacy Board Compatibility
- TP D2x/msd-RC rear plug compatibility with the popular TP A41/30x-RC family

Please contact your local Concurrent Technologies sales office for further details on board build options and accessories.

Datasheet Code 1776/0319

a