Express-BD7
COM Express Basic Size Type 7 Module with Intel® Xeon® D and Pentium® D SoC

Features
- Intel® Xeon® D and Pentium® D SoC (up to 16 cores)
- Up to 32GB dual channel DDR4 at 1866/2133/2400MHz ECC (dependent on SoC SKU)
- Two 10G Ethernet and NC-SI support
- Up to 32 PCIe lanes (24x Gen3, 8x Gen2)
- GbE, two SATA 6 Gb/s, four USB 3.0/2.0
- Supports Smart Embedded Management Agent (SEMA®) functions
- Extreme Rugged operating temperature: -40°C to +85°C (build option with selected SoC SKU)

Specifications
- Core System
  CPU
  Intel® Xeon® D and Pentium® D SoC, 14nm process (formerly "Broadwell-DE")
  Xeon® D1559 1.6/2.1GHz 18MB, 45W (12C) (eTEMP)
  Xeon® D1539 1.6/2.2GHz 12MB, 35W (8C) (eTEMP)
  Xeon® D1577 1.3/2.1GHz 24MB, 45W (16C)
  Xeon® D1548 2.0/2.6GHz 12MB, 45W (8C)
  Xeon® D1527 2.2/2.7GHz 6MB, 35W (4C)
  Pentium® D1508 2.2/2.6GHz 3MB, 25W (2C)
  Pentium® D1519 1.5/2.1GHz 6MB, 25W (4C) (eTEMP)
  Note: SKUs not listed above and D1577/D1559 may be supported on a project basis. please contact your ADLINK representative.
  Note: Availability of features may vary between processor SKUs.
- Memory
  Dual channel 1867/2133/2400 MHz DDR4 ECC memory up to 32GB in dual SODIMM sockets (dependent on SoC SKU)
  Note: Only D1548 support up to 2400 MHz
  Only D1548 support up to 1866 MHz
- Embedded BIOS
  AMI EFI with CMOS backup in 16MB SPI BIOS
- Cache
  24MB for D1577
  18MB for D1559
  12MB for D1548/D1539
  6MB for D1527/D1519
  3MB for D1508
- Expansion Busses
  PCIe x16 or 2 PCIe x8 or 4 PCIe x4 (Gen3)
  8 PCIe lanes (Gen3): AB connector, Lanes 8-15
  6 PCIe lanes (Gen2): AB connector, Lanes 0/1/2/3/4/5
  Up 2 PCIe lanes (Gen2): CD connector, Lanes 6/7
  LPC bus, SMBus (system), I²C (user)
  Note: PCI Express lane 7 support in place of GbE
- 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

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 these "build option" part numbers will need to be newly created and this will result in production lead times.
Specifications

● **TPM**
  - Chipset: Infineon
  - Type: TPM 2.0

● **Power**
  - Standard Input: ATX: 12V±5%, 5Vsb ±5%; AT: 12V±5%
  - Wide Input: ATX: 8.5-20V, 5Vsb ±5%; AT: 8.5-20V
  - Management: ACPI 5.0 compliant, Smart Battery support
  - Power States: C1-C6, S0, S1, S3, S4, S5, S5 ECO mode (Wake-on-USB S3/S4, WOL S3/S4/S5)
  - ECO mode: Supports deep S5 mode for power saving

● **Operating Systems**
  - **Standard Support**
    - Windows Server 2012 (64-bit)
    - Windows 7 (64-bit)
    - Linux (64-bit)
  - **Extended Support (BSP)**
    - Linux (64-bit)

Mechanical and Environmental

- Form Factor: PICMG COM.0 Rev 3.0, Type 7
- Dimension: Basic size: 125 mm x 95 mm

- **Operating Temperature**
  - Standard: 0°C to 60°C
  - Extreme Rugged: -45°C to +85°C (build option, standard voltage only)
  - Note: Extreme Rugged availability dependent on SoC SKU

- **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

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Be aware that these “build option” part numbers will need to be newly created and this will result in production lead times.
Ordering Information

- **Express-BD7-D1559**
  Basic COM Express Type7 module with Intel Broadwell-DE D1559, 12C (eTEMP)
- **Express-BD7-D1539**
  Basic COM Express Type7 module with Intel Broadwell-DE D1539, 8C (eTEMP)
- **Express-BD7-D1519**
  Basic COM Express Type7 module with Intel Broadwell-DE D1519, 4C (eTEMP)
- **Express-BD7-D1577**
  Basic COM Express Type7 module with Intel Broadwell-DE D1577, 16C
- **Express-BD7-D1548**
  Basic COM Express Type7 module with Intel Broadwell-DE D1548, 8C
- **Express-BD7-D1527**
  Basic COM Express Type7 module with Intel Broadwell-DE D1527, 4C
- **Express-BD7-D1508**
  Basic COM Express Type7 module with Intel Broadwell-DE D1508, 2C

Note: All modules above support SFP+ 10GbE. Supports for 10GBASE-T (Copper) is by project basis.

Accessories

Heat Spreaders

- **HTS-BD7-BL**
  Heatspreader for Express-BD7 with threaded standoffs for bottom mounting
- **HTS-BD7-BTL**
  Heatspreader for Express-BD7 with through hole standoffs for top mounting

Passive Heatsinks

- **THS-BD7-BL**
  Low profile heatsink for Express-BD7 with threaded standoffs for bottom mounting
- **THS-BD7-BTL**
  Low profile heatsink for Express-BD7 with through hole standoffs for top mounting
- **THSH-BD7-BL**
  High profile heatsink for Express-BD7 with threaded standoffs for bottom mounting

Active Heatsink

- **THSF-BD7-BL**
  High profile heatsink with fan for Express-BD7 with threaded standoffs for bottom mounting

Starter Kit

- **COM Express Type 7 Starter Kit Plus**
  Starter kit for COM Express Type 7

Note: Two starter kits are available: one supporting SFP+ and one supporting 10GBASE-T.