

# Express-ID7

## COM Express Basic Size Type 7 Module with New Gen Intel® Xeon® D SoC

### Features

- AVX-512 VNNI for AI inference, data analysis
- Up to 128GB DDR4 SO-DIMM, 2933MT/s, ECC
- 4x 10G Ethernet and NC-SI support
- 16 PCIe Gen4 lanes and 16 PCIe Gen3 lanes
- 10+ year product availability
- Extreme Rugged operating temperature: -40°C to 85°C (build option, selected SKUs)

### Specifications

#### • Core System

##### CPU

New Gen Intel® Xeon® D-1700 processor (formerly "Ice Lake-D LCC")

Xeon® D-1746TER 2.0/3.1GHz 15MB, 67W (10C, eTEMP)

Xeon® D-1735TR 2.2/3.4GHz 15MB, 59W (8C)

Xeon® D-1732TE 1.9/3.0GHz 15MB, 52W (8C, eTEMP)

Xeon® D-1715TER 2.4/3.5GHz 10MB, 45W (4C, eTEMP)

Xeon® D-1712TR 2.0/3.1GHz 18MB, 40W (4C)

Supports: Intel® VT, Intel® VT-d, Intel® TXT, Intel® SSE4.2, Intel® HT Technology, Intel® 64 Architecture, Execute Disable Bit, Intel® Turbo Boost Technology 2.0, Intel® AVX-512, Intel® AVX2, Intel® AES-NI, PCLMULQDQ Instruction, Intel® Secure Key and Intel TSX-NI.

Note: Availability of features may vary between processor SKUs.

Note: Additional 7 year availability SKUs with QAT feature are supported by project basis. Please contact your ADLINK representative

##### Memory

Triple channel up to 2933 MT/s ECC/non-ECC DDR4 memory up to 128GB in four SODIMM sockets

two SO-DIMM on top side, two SO-DIMM on bottom side

Xeon® D-1746TER/D-1732TE/D-1715TER: max. 2667MT/s

Xeon® D-1735TE: max. 2933MT/s

Xeon® D-1712TR: max. 2400MT/s

Note: It is recommended to check that the bottom side specifications are suitable for your application purposes.

##### Embedded BIOS

AMI UEFI with CMOS backup in 32MB SPI BIOS (dual BIOS by build option)

##### Cache

Xeon® D-1746TER/D-1735TR/D-1732TE: 15MB

Xeon® D-1715TER/D-1712TR: 10MB

##### Expansion Busses

- 16 PCI Express Gen4: Lanes 16-31 (configurable to one x16, two x8, four x4)
- 8 PCI Express Gen3: Lanes 0-7 (configurable to one x8, two x4, four x2)
- 8 PCI Express Gen3: Lanes 8-15 (configurable to one x8, two x4, four x2)
- LPC bus (through an ESPI to LPC bridge IC, SMBus (system) , I<sup>2</sup>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<sup>2</sup>C, watchdog timer, fan control and failsafe BIOS (dual BIOS by build option)

##### Debug Headers

30-pin multipurpose flat cable connector for use with DB-30 x86 debug module providing BIOS POST code LED, EC access, SPI BIOS flashing, power testpoints, debug LEDs

Preliminary



#### • 10G Ethernet

##### Intel® MAC/Controller

Intel®10G Ethernet controller integrated in SoC

##### Interface

4x 10GBASE-KR and its sideband signals

#### • Ethernet

##### Intel® MAC/Controller

Intel Ethernet controller I210 series

##### Interface

1000/100/10 GbE connection

##### NC-SI

connect to GbE controller

#### • Multi I/O and Storage

##### USB

4x USB 3.x/2.0/1.1 (USB 0,1,2,3)

##### SATA

2x SATA 6Gb/s (SATA 0,1)

##### Serial

2x UART ports with console redirection

##### GPIO/SD

4x GPO and 4x GPI from EC (GPI with interrupt TBC)

#### • Super I/O

Supported on carrier if needed (standard support for W83627DHG-P, other Super I/O supported by project basis)

#### • TPM

##### Chipset

Infineon

##### Type

TPM 2.0 (SPI based)

Note: "build option" indicates an alternative BOM configuration to support additional or alternative functions that are supported by project basis. Be aware that these "build option" part numbers will need to be newly created and this will result in production lead times

## Specifications

### • Power

#### Standard Input

ATX: 12V+/-5% / 5Vsb +/-5% (TBC); or AT: 12V±5%

#### Management

ACPI 5.0 compliant

#### Power States

C1-C6, S0, S5, S5 ECO mode

#### ECO mode

support deep S5 mode for power saving

### • 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 (Storage: -20°C to 80°C)

Extreme Rugged: -40°C to 85°C (build option, selected SKUs) (Storage: -40°C to 85°C) (TBC)

#### 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 Server, Windows® 10 IoT Enterprise LTSC, Yocto Linux, VxWorks (TBC)

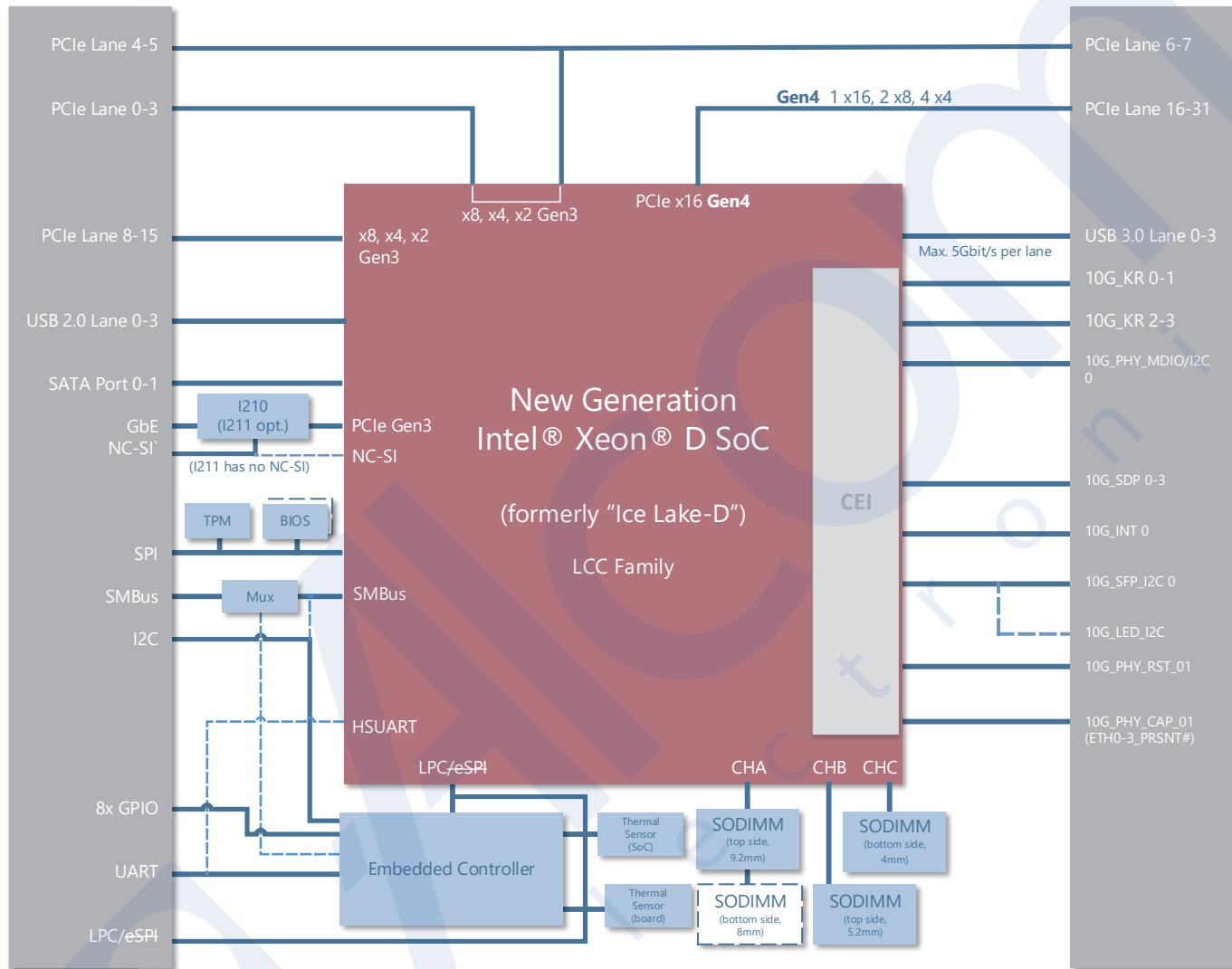
#### Extended Support (BSP)

Yocto project based Linux

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## Functional Diagram



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## Ordering Information

- **Express-ID7-D-1746TER**  
Basic size COM Express Type7 module with Intel® Xeon® D-1746TER, 10C, 4 SO-DIMMs
- **Express-ID7-D-1735TR**  
Basic size COM Express Type7 module with Intel® Xeon® D-1735TR, 8C, 4 SO-DIMMs
- **Express-ID7-D-1732TE**  
Basic size COM Express Type7 module with Intel® Xeon® D-1732TE, 8C, 4 SO-DIMMs
- **Express-ID7-D-1715TER**  
Basic size COM Express Type7 module with Intel® Xeon® D-1715TER, 4C, 3 SO-DIMMs
- **Express-ID7-D-1712TR**  
Basic size COM Express Type7 module with Intel® Xeon® D-1712TR, 4C, 3 SO-DIMMs

\*For processor SKUs not listed, please contact your ADLINK representative for availability.

## Starter Kit

- **COM Express Type 7 Starter Kit Plus Specific**  
Starter kit for COM Express Type 7  
For PCIe Gen4 specific version, please contact your local ADLINK representative.

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## Accessories

### Heat Spreaders

- **HTS-ID7-B**  
Heatspreader for Express-ID7 with threaded standoffs for bottom mounting
- **HTS-ID7-BT**  
Heatspreader for Express-ID7 with through hole standoffs for top mounting

### Passive Heatsinks

- **THS-ID7-B**  
Low profile heatsink for Express-ID7 with threaded standoffs for bottom mounting
- **THS-ID7-BT**  
Low profile heatsink for Express-ID7 with through hole standoffs for top mounting
- **THSH-ID7-B**  
High profile heatsink for Express-ID7 with threaded standoffs for bottom mounting

### Active Heatsink

- **THSF-ID7-B**  
High profile heatsink with Fan for Express-ID7 with threaded standoffs for bottom mounting



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