

OPALE V2-HDEC Series

High Density Embedded Computers



► 80 PCI Express lanes, that means +300% increase versus the current PICMG 1.3

Based on HDEC Series building blocks invented by Trenton, OPALE V2-HDEC drives many of today's High Density Embedded Computing systems. For example, HEP8225 System Host Board supports your choice of two, long-life/embedded Intel® Xeon® E5-2600 v4 processors and a total of 80 native PCI Express 3.0 lanes that are routed to edge connectors for use on HDB8228 backplane, without extra PCIe switch I.C.'s that reduce latency performances.

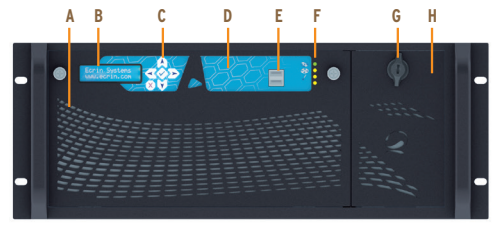
Next HDEC Series System Host Board SEP8253 powered by dual Intel® Xeon® Gold 6100 Series processors formally known as Skylake-SP, will support 88 lanes of PCIe 3.0 on same HDEC Series® backplane (availability in Q4 2017).

OPALE V2-HDEC offers very powerful platform with huge flexibility thanks to 8 PCI Express Gen3 slots ready to accept full length I/O boards, especially GPGPU cards. It excels in the bandwidth-intensive computation for oil and gas exploration, remote sensing operations, AI, machine learning, among other common embedded systems tasks.

- › Rugged, industrial-grade anti-corrosion and long term heavy-duty steel chassis
- › Efficient chassis cooling for long-term system reliability
- › Dual-processor HDEC Series Host Board
 - Up to 28-Core with Broadwell-EP (Intel® Xeon® E5-2600 v4)
 - Up to 512GB DDR4-2400 ECC Registered - 4x channels per processor
- › Up to 8 PCI Express I/O cards
 - 4x PCIe Gen3 x16 + 4x PCIe Gen3 x4
 - Communication between SHB and I/O boards with optimal latency
- › Highly configurable and scalable

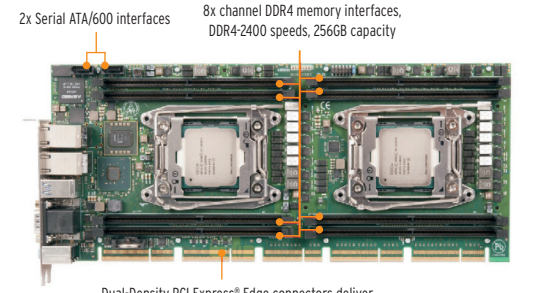
- › Front-access drive bays
- › N+1 redundant hot-swap PSUs, for mission-critical performance
- › Reduced TCO and downtime in harsh environments
- › Local and Remote Active Management to detect errors before they occur
- › High reliability for continuous operation
- › Long life: 7 years
- › Easy customization, brand name and flexibility with competition advantage
- › Made in Europe with CE mark

Rack specifications	
Construction	Anti-corrosion and long term heavy-duty steel, black color
Dimensions (W x H x D)	19" / 4U with 17.8 inch depth (483 x 177 x 451 mm)
Weight	22.5 kg
Cooling	Three 92 mm ball bearing low noise fans with monitoring Front access for easy maintenance
Power supply	Compliant with mini redundant PSU
Drive bays	Two 5.25" front accessible drive bay
Backplane configuration	Up to 8 slots backplane, all for full length I/O boards
Front panel	Front door with lock, two USB and drive bay access Front door for dust filter and fans maintenance Embedded MMI, 4 LEDs with I/O capabilities
Cards lock	Adjustable hold down bar for cards Rugged front holding parts for full length CPU and I/O boards
Carton Size (W x H x D)	600 mm x 345 mm x 640 mm



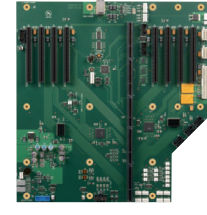
- A: Dust filter & Fan access door
- B: LCD 2x 16 characters
- C: Keyboard (Power & Reset)
- D: Lexan for easy customization
- E: 2x USB (optional)
- F: 4x tri-color LEDs
- G: Key lock
- H: Drive bay door

SHB specifications	
Form factor	HDEC Series dual-processor system host board
Processor	Dual LGA2011 socket - Intel® Xeon E5-2600 v4 Series 14, 12, 10 and 8-core processor options available
Chipset	Intel® C612 Chipset (Wellsburg)
Memory	Four channels on each Intel Xeon E5-2600 v4 Series Processor DDR4-2400/2133 ECC Reg. - 8 x DIMM, up to 512GB
Video	ASPEED AST2400, VGA output
Ethernet	2x 10GbE (Intel® X540-BT2) - 10GBase-T 1x GbE (Intel® I-210-AT) - 10/100/1000Base-T 1x GbE (Intel® I-217-LM) - 10/100/1000Base-T
Disk	8x SATA 6Gb/s ports (x6 passed down to backplane) Intel® Rapid Storage Technology, supports RAID 0/1/10
USB	6x USB 3.0 + 4x USB 2.0
Audio	Line In, Line Out, Mic In
COM	1x RS-232
Watchdog Timer	32msec ~32 sec software programmable, can generate system reset



- 2x Serial ATA/600 interfaces
- 8x channel DDR4 memory interfaces, DDR4-2400 speeds, 256GB capacity
- Dual-Density PCI Express® Edge connectors deliver expanded PCIe, device I/O, SHB power and diagnostics
- 80-lanes of PCIe 3.0
- System diagnostics and I/O
- 6x SATA/600 interfaces
- System integration efficiency
- 6x USB interfaces
- Standard PCIe I/O connectors

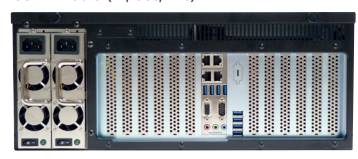
Backplane specifications	
HDB8228	4x PCIe x16 gen 3.0 4x PCIe x4 gen 3.0 (x16 mech. connectors) 6x SATA/600 connectors 2x USB3 interface header connections 4x USB2 interface ports 1x Serial port Kbd & Mouse PS/2 mouse header 7x GPIO Signals 4x System fan headers with built-in fan speed control



Environmental specifications	
Temperature	Operating: 0~45°C (MIL-STD-810G method 502.5 / 501.5) - Storage: -20~80°C
Humidity	Operating: 5 to 90% non condensing
Altitude	0-3000m (0-10,000ft) operating
Shock & vibration	Operating: 15G, 11ms 6 axis (MIL STD 810 F, method. 516.5) - 5~100 Hz 0.8G (MIL STD 810 F, method. 514.5)
CE certification	EMC: 2014/30/UE ; EN 61000-6-2, EN55032, EN 55024 - SAFETY: 2014/35/UE ; EN60950-1 : 2006 2 nd edition A11 : 2009 + A1 : 2010 + A12 : 2011 + A2 : 2014

System Monitoring and Management	OEM services
> Local control with embedded MMI (Windows services & Linux daemons) - FAN control & monitoring - Redundant P/S default - System & network information - Watchdog & elapsed time counter - Alarm (fan, temperature, redundant P/S) - Log file - User script launch form menu entry - Easy configuration with .TXT file	> Branding user's lexan - Costless, NRE fees only > Modified COTS customization: - Front panel design - Specific I/O on front panel / Special connectors on rear panel - Specific H/W configurations - Specific S/W functionality Call us for more information ...

Standard configuration		Options	
Power Supply Unit	2x 800W mini-redundant - High efficiency 80+ 90 ~ 240 VAC full range / 47-63 Hz 5V@32A, 12V@65A, -12V@0.8A, 3.3V@32A, 5VSB@3.5A	Processor	- Dual Xeon E5-2680 v4 (14C/28T, 2.4 GHz, 35MB Cache, 120W TDP, long life) - Dual Xeon E5-2658 v4 (14C/28T, 2.3 GHz, 35MB Cache, 105W TDP, long life) - Dual Xeon E5-2620 v4 (8C/16T, 2.1 GHz, 20MB Cache, 85W TDP, long life) - Dual Xeon E5-2648L v4 (14C/28T, 1.8 GHz, 35MB Cache, 75W TDP, long life) - Dual Xeon E5-2628L v4 (12C/24T, 1.9 GHz, 30MB Cache, 75W TDP, long life) - Dual Xeon E5-2618L v4 (10C/20T, 2.2 GHz, 25MB Cache, 75W TDP, long life)
Drives	1 x Slim DVD RW 1 x 2.5" SATA removable drive enclosure 1 x 5.25" front accessible drive bay free	Memory	DDR4-2400 ECC Registered: 8GB / 16GB / 32GB / 64GB / 128GB / 256GB
Front I/O (behind door)	2 x USB 2.0	Disk	- 2.5" SATA 7200 RPM Hard Drive (250GB ~ 2TB) - SLC or MLC Solid State Drive (32 GB ~ 2TB)
Rear I/O	VGA + 2x 10GbE + 2x GbE + 4x USB 3.0 + 4x USB 2.0 1x COM + Audio (In, Out, Mic)	OS	Microsoft® Windows 10 professional Edition - OEM 64-bit, US/FR Linux 64-bit



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