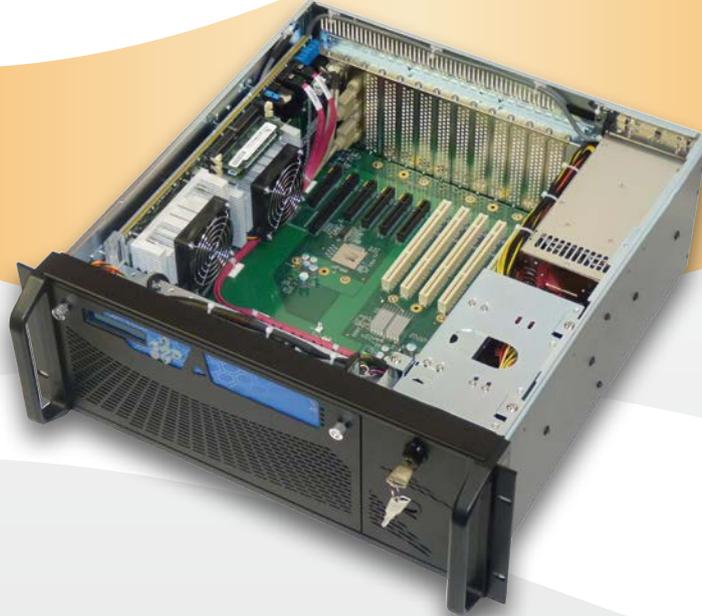# OPALE V2-HPEC

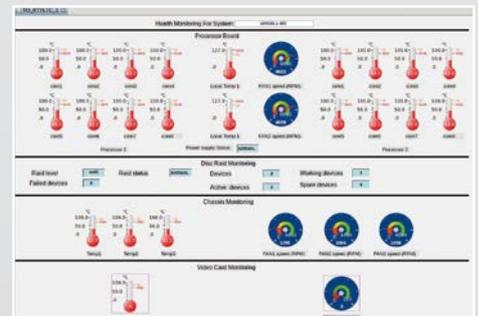# High Performance Embedded Computer for High Energy Physics & Industry

▶ EPICS ready for real-time data acquisition and communication systems

OPALE V2-HPEC series, based on High Performance Embedded Multi-Core / Multi-Thread System Host Board (PICMG 1.3 standard), offers very powerful platform with huge flexibility thanks to 14 PCIe/PCI slots ready to accept full length I/O boards. This reliable industrial computer is targeting control and real-time data acquisition and communication systems.

The Experimental Physics and Industrial Control System (EPICS) integrated software allows the deployment and remote monitoring of networked control systems. OPALE V2-HPEC can be used as plant controller and enable it to be EPICS monitorable and configurable without disturbing the execution at any time. Most of High Energy Physics labs, like DESY, ITER Organisation, CERN, SLAC, MIT, ARGONNE, SACLAY, NASA use this environment, but also large industrial companies, BOEING, US NAVY...
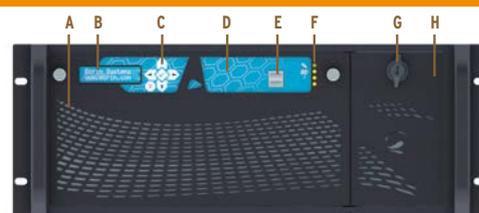
> High Performance Multi-Core Computing:
  - **Up to 20-Core / 40-Thread with Ivy Bridge-EN** New
  - Up to 96Go DDR3-1600 ECC Reg. - 3x channels per processor
  - **PCIe Gen3** – Universal Graphic & Server Class

> Up to 14 full length cards / 451 mm depth only

> Local and Remote Active Management to detect errors before they occur

> EPICS driver for remote health monitoring
  - CPUs / System Temperatures & Fans
  - Redundant PSU / Linux RAID status

> Reduced TCO and downtime in harsh environments

> High reliability for continuous operation

> Long life: up to 10 years by contract

> Easy customization, brand name and flexibility with competition advantage

> Made in Europe with CE mark

ecrin SYSTEMS

OPALE V2-HPEC

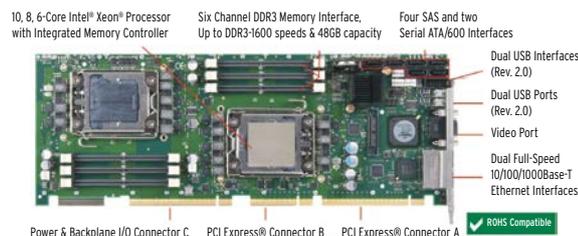## Rack specifications

Construction	Anti-corrosion and long term heavy-duty steel, black color
Dimensions (W x H x D)	19'' / 4U with 17.8 inch depth (483x177x451mm)
Cooling	Three 92mm ball bearing low noise fans with monitoring Front access for easy maintenance
Power supply	PS2 form factor, compliant with Mini Redundant PSU
Drive bays	Two 5,25"front accessible drive bay
Backplane configuration	14 slots backplane, all for full length I/O boards
Front panel	Front door for dust filter and fans maintenance Embedded MMI, 4 LEDs with I/O capabilities
Cards lock	Adjustable hold down bar for cards Front holding parts for full length CPU and I/O boards

A : Dust filter & Fan access door   E : 2 x USB (optional)
B : LCD 2x16 characters   F : 4 x tri-color LEDs
C : Keyboard (Power & Reset)   G : Key lock
D : Lexan for easy customization   H : Drive bay door

SHB specifications

Form factor	PICMG 1.3 – Universal Graphic Class / Server Class
Processor	Dual LGA1356 socket – Intel® Xeon E5-2400 Series x8, x6 and x4-core processor options available
Chipset	Intel® C604 Chipset (Patsburg-B)
Memory	Three channels on each Intel Xeon E5-2400 Series Processor DDR3-1600/1333 ECC Reg. – 6 x Mini-DIMM, up to 96GB
Video	XGI Z11M GPU, 8Mo, VGA output
Ethernet	2x GbE (Intel® i350) 1x GbE (Intel® 82579) with Intel® AMT 7.0 support
Disk	4x SAS/SATA 3Gb/s ports + 2x SATA 6Gb/s ports Intel® Rapid Storage Technology, supports RAID 0/1/10
USB	8x USB 2.0
Watchdog timer	32msec ~32 sec software programmable, can generate system reset
Hardware monitor	CPU/System temperature, fan speed and onboard DC voltages

10, 8, 6-Core Intel® Xeon® Processor with Integrated Memory Controller

Six Channel DDR3 Memory Interface, Up to DDR3-1600 speeds & 48GB capacity

Four SAS and two Serial ATA/600 Interfaces

Dual USB Interfaces (Rev. 2.0)
Dual USB Ports (Rev. 2.0)
Video Port
Dual Full-Speed 10/100/1000Base-T Ethernet Interfaces

ROHS Compatible

Power & Backplane I/O Connector C   PCI Express® Connector B   PCI Express® Connector A

Backplane Specifications

BPC7041	1xSHB / 9xPCIe x4 / 1xPCIe x1/x4 PEX10 and IOB33 mezzanine are required
BPX6610	1xSHB / 2xPCIe x8 / 4xPCIe x4 / 6xPCI-X
BPG7087	1xSHB / 4xPCIe x16 / 5xPCIe x4 (ideal for high end Graphics and GPU solutions)
BPX8093 **New**	1xSHB / 6xPCIe x8 **Gen3** / 4xPCIe x4 **Gen3**

New PCIe Gen 3

Environmental specifications

Temperature	Operating: 0~45°C / Storage -20~80°C
Humidity	Operating: 5 to 90% non condensing
Shock & vibration	Operating: 15G, 11ms 6 axis – 5~100 Hz 0.8G
Noise	37dBA (MIL-STD-740-1)
CE certification	EMC: UE 2004/108/CE ; EN 61000-6-2, EN55022, EN 55024 SAFETY: UE 2006/95 CE ; EN 60950-1: 2006 2nd edition

System Monitoring and Management

> Intel® AMT 7.0 for remote management (option)
> Local control with embedded MMI (Windows services & Linux deamons)
   - FAN control & monitoring
   - Redundant P/S default
   - System & network information
   - Watchdog & elapsed time counter
   - Alarm (fan, temperature), Log file
   - User script launch form menu entry
   - Easy configuration with .TXT file
   - Linux EPICS Driver for remote health monitoring

OEM services

> Branding user's Lexan – Costless, NRE fees only
> Customization :
   - Front panel design
   - Specific I/O on front panel / rear panel
   - Specific H/W configurations
   - Specific S/W functionality
Call us for more information …

Standard configuration

Power Supply Unit	2x 800W 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
Backplane	BPG7087
Drives	1 x Slim DVDRW 1 x 2,5" SATA Removable Drive Enclosure 1 x 5,25" front accessible drive bay free
Front I/O (behind door)	2 x USB
Rear I/O	VGA + 2xGbE + 4xUSB 2.0 Kbd&Mouse PS2 + 2x COM (with IOB33)

Options

Processor **New**	- Dual Xeon E5-2430 v2 (Six-Core, 2.5 GHz, 15M Cache, 80W TDP, long life) - Dual Xeon E5-2448Lv2 (Ten-Core, 1.8 GHz, 25M Cache, 70W TDP, long life) - Dual Xeon E5-2428Lv2 (Eight-Core, 1.8 GHz, 20M Cache, 60W TDP, long life) - Dual Xeon E5-2418Lv2 (Six-Core, 2.0 GHz, 15M Cache, 50W TDP, long life) - Dual Xeon E5-2430 (Six-Core, 2.2 GHz, 15M Cache, 95W TDP, long life) - Dual Xeon E5-2448L (Eight-Core, 1.8 GHz, 20M Cache, 70W TDP, long life) - Dual Xeon E5-2428L (Six-Core, 1.8 GHz, 15M Cache, 60W TDP, long life)
Memory	DDR3-1600 ECC Registered : 6GB / 12GB / 24GB / 48GB / 96GB
Disk	- 2,5"SATA 7200 RPM Hard Drive (250GB ~ 1TB) - 2,5"1 SAS 10K/15K RPM Hard Drive (300GB ~ 900GB) - SLC & MLC Solid State Drive (32 GB ~ 512 GB)
OS	- Microsoft® Windows - Linux

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