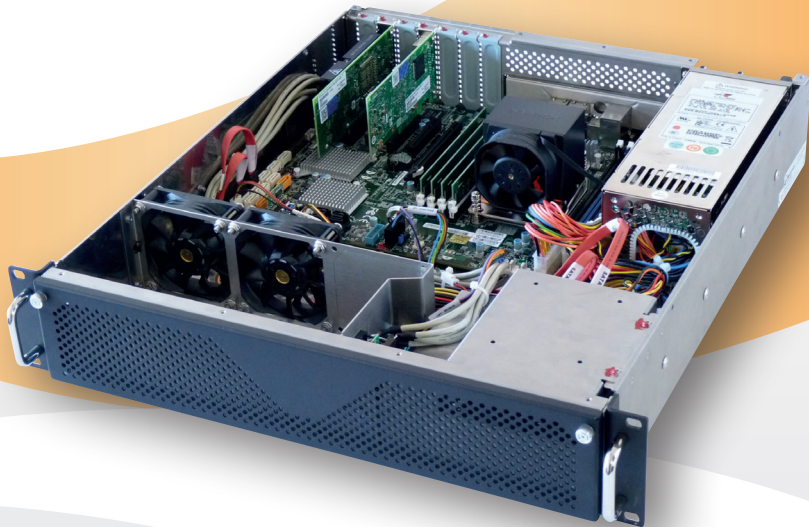# OPALE V2-MIL Compact
Rugged Server

▶ MIL-STD Qualified stainless steel short-Server Ready for harsh environments

Military and industrial professionals choose ECRIN Systems Rugged Servers when they need high-performance computing and high-capacity data storage in a rugged, stainless-steel package able to withstand some of the roughest terrains and toughest applications. OPALE V2-MIL Compact highly customizable Rugged Servers are used by the French Army and Navy for everything from info-communications, to weapons control, RADAR sensor and surveillance. They are particularly relax in harsh salt-fog environment.

High-end computing performance in a 2U chassis form factor, with a depth under 20'' (492mm), OPALE V2-MIL Compact fits most any 19'' rack mount space. It will be particularly useful when foot print, performance, reliability and longevity are not optional.

Distinctively customized oriented, thanks to our in-house design center, ECRIN Systems will help to personalize your computer and give you competitive advantage in the industrial world. To precisely meet your requirements, even for small quantities, ECRIN takes full system development responsibility and guarantee long term availability to allow you to concentrate on your added value. From mechanical parts to industrial design, with user LED's and I/O's, easy customized front and rear connectors, you will plug and forget it, ever on ocean side where the sea salt makes other chassis get rusty.

▶ Applications
RADAR data processing - NAS rugged server - Naval & shelter environment - Mass recorder - Weapon control - Surveillance

> Up 0°C/46°C operating	> EMI/RFI: AECTP500 with power line filter
> -35°C/+71°C storage	> 47.6 dBA
> RH: 93%@40°C non-condensing	> Intel® Xeon® E5-2600 v4/v3 series
> Altitude: 0-3500m operating	> Xeon Scalable series, on demand
> Salt Fog protection	> 7x slots low-profile I/O
> 15g@20ms on Z-axis	> Up to 6x removable 2.5'' SSD (12TB)
> First natural frequency > 80Hz	> MIL-Circular connectors, on demand

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Rack specifications

Construction	Stainless steel
Dimensions (W x H x D)	19'' / 2U with 19.4 inch depth (483x88x492mm)
Weight	14 kg (standard configuration)
Color	Chassis: stainless steel - Front door: black
Cooling	Two 80mm ball bearing low noise fans Fan speed regulation and monitoring Front access dust filter
Power supply	2U form factor, compliant with single and mini Redundant PSU
Drive bays	One 5.25" front accessible drive bay One 3.5" front accessible drive bay
Motherboard	ATX : 12'' x 10'' (30.5cm x 25.4cm) 7x slots for Low Profile board
Front panel	Front door for buttons, drives bays and USB access 3x tri-color LEDs
Carton size (W x H x D)	580x260x680mm

Front

Front: oper

Rear

A : Single door with 2x Thumbscrews
B : Dust filter access door
C : 4x USB 2.0
D : 3.5" drive bay
E : 5.25" drive bay
F : 2x 500W redundant PSU

G : Ground
H : ATX motherboard I/O
I : 3x tri-color LEDs
J : Power & Reset buttons
K : Expansion slots (7x Low Profile)
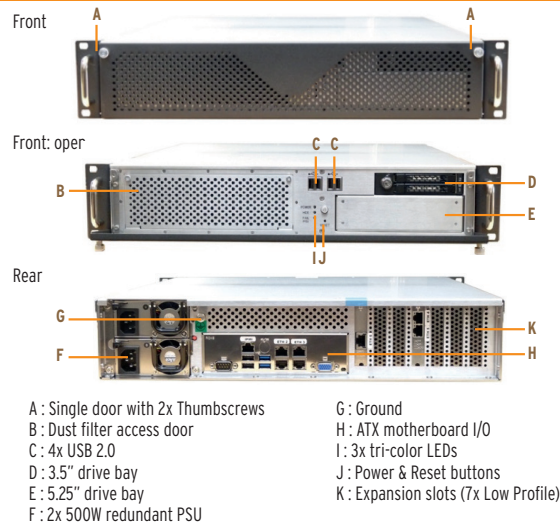
Server Motherboard specifications

Form factor	ATX: 12'' x 10'' (30.5cm x 25.4cm)
Processor	LGA2011 socket for Intel® Xeon® E5-2600 v4/v3 and E5-1600 v4/v3
Chipset	Intel® C612
Memory	Quad channel DDR4 2400/2133 MHz ECC Registered Up to 512 GB, 8x 288-pin DDR4 DIMM slots
Video	Aspeed AST2400 BMC (VGA output)
Ethernet	4 x GbE 10/100/1000 BaseT (Intel® i350-AM4) 1x LAN dedicated to IPMI (Realtek RTL8201N PHY)
Disk	8x SAS3 (12Gbps) via Broadcom 3008 - SW RAID support 0/1/10 10x SATA3 (6Gbps) via C612 - SW RAID support 0/1/5/10
USB	4x USB 3.0 ports (2 rear + 1 via header + 1 Type A) 8x USB 2.0 ports (2 rear + 6 via header)
Watchdog Timer	Software programmable, can generate system reset
Hardware Monitor	CPU/System temperature, fan speed (x6) and onboard DC voltages
Serial port	2x fast UART 16550 serial, 2 COM ports (1 rear, 1 header)
TPM	1x TPM Header
Expansion Slots	1x PCI-E 3.0 x4 (in x8) slot 1x PCI-E 3.0 x8 (in x16) slot 2x PCI-E 3.0 x8 slots 1x PCI-E 2.0 x2 (in x4) slot 1x PCI-E 2.0 x4 (in x8) slot

X10SRH-CLN4F

Environmental specifications

Temperature	Operating: 0~46°C (MIL-STD-810G) - Non-operating: -35~71°C
Humidity	Operating: 93% @ 40°C non condensing (EN60068-2-3) - Non-operating: 93% @ 25~40°C non condensing
Air pressure	Operating: 650 mbar à 1300 mbar (Stanag 4370, AECTP300, method 312) - Non-operating: 580 mbar à 1300 mbar
Shock	Operating: 15g @ 20 ms on Z axis, 8g @ 20 ms on X,Y axis (MIL-STD-810G)
Vibration	Operating: 4~8Hz @ 6m/s^2, 8~12Hz @ 25m/s^2, 12~33Hz @ 10m/s^2 (MIL-STD-167-1A) - No resonance frequency under 80Hz
Noise	47.6 dBA (NF EN ISO 3744 - 2012)
CE certification	EMC: 2014/30/UE ; EN 61000-6-2, EN55032, EN 55024 - SAFETY: 2014/35/UE ; EN60950-1 : 2006 2nd edition A11 : 2009 + A1 : 2010 + A12 : 2011 + A2 : 2014
EMI / RFI	AECTP500 (with external EMI Power Line Filter for NCE01, NCE02)

System Monitoring and Management

> IPMI 2.0 with KVM support
> SuperDoctor® 5
> CPU / System Overheat LED

OEM services

> Customization:
 - Specific I/O on front panel / rear panel
 - Specific H/W and SW configurations

Standard configuration

Power Supply Unit	2x 500W Redundant 2U P/S - High Efficiency 80+ 90 ~ 240 VAC full range / 47~63 Hz 5V@32A, 12V@41A, -12V@0.5A, 3.3V@25A, 5VSB@3.5A
Drives	1 x 2.5" SATA Removable Drive Enclosure 1 x 5.25" front accessible drive bay free
Front I/O (behind door)	4 x USB 2.0
Rear I/O	VGA, 4x GbE, 1x GbE (IPMI) 2x USB 3.0 + 2x USB 2.0 + 1x COM

Options

Processor	- Intel® Xeon® Processor E5-2600 v4 Family (8 / 10 / 12 / 14 / 16 / 18 / 22 Cores) - Intel® Xeon® Processor E5-1600 v4 Family (4 / 6 / 8 Cores)
Memory	DDR4-2400 ECC Registered : 4GB ~ 512GB
Disk	- 2.5" 7200 RPM Hard Drive (500Go ~ 2To) - SLC & MLC Solid State Drive (32 Go ~ 2To) - Up to 6x hot swap 2.5" HDD/SSD with optional 4in1 drive bay
OS	- Microsoft® Windows® 7 & 8.1 64-bit - Microsoft® Windows® Server 2012 R2 / Server 2016 - Linux 32/64-bit

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