



S2U5 & S2U5.5 HIGH PERFORMANCE 2U SERVERS

DESIGNED FOR
MISSION-CRITICAL APPLICATIONS

DESIGNED IN-HOUSE IN FRANCE
ADAPTABLE TO ALL REQUIREMENTS
SUPERIOR QUALITY



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The S2U5 series is the compact, high-performance dual processor system from APLUS Système Automation's rugged servers line.

Performance, Reliability, and Ruggedness

Featuring two Intel® scalable Xeon® Processors, the S2U5 series provides exceptional processing performance in an ultra-compact form factor. It is the ideal choice for industrial, embedded and military applications that require rugged computing power to drive sophisticated applications, along with high environmental resilience.

Scalable and Versatile

The S2U5 industrial server series offers an ideal computing solution for Industrial, Heavy Industrial, or Military applications. Users can choose the options that best fit their needs, allowing the base configuration to be easily adapted. The S2U5 supports up to 7 low-profile add-on cards or 3 full height, full length PCIe cards, providing extensive expansion capabilities. To ensure compatibility with different environments, various power supply options are available to meet specific application needs.

Designed for mission-critical applications

Our Servers are built to perform reliably in harsh environments. Marine-grade 316L stainless steel chassis offers durability and resilience. The ventilation system with silent block-mounted fans optimize airflow and reduce noise. Support brackets secure all expansion cards, ensuring stability against shocks and vibrations. Additionally, honeycomb openings help our systems meet the highest standards for electrical and electromagnetic protection, including military requirements.

Three ruggedness grades — industrial, rugged, and military — are available to ensure optimal performance in any challenging environment:



Industrial Grade

IS1U5 | IW1U5.3



Rugged Grade

RS1U5 | RW1U5.3



Military Grade

MS1U5 | MW1U5.3

Certified AddOn boards for Military grade systems:

- GPU nVidia Tesla L4
- Sunhillo PCE335: 4 high-speed serial lines supporting multiple protocols (X.25, HDLC, TA-LIB, L16, etc.)
- Intel® Ethernet Adapters (E810)
- LSI MR-SAS9560: 12 Gbit/s throughput for enhanced system performance

2U Server High Performance

Grade-specific technological enhancements

	Industrial	Rugged	Military
Hard Disk Drives (HDDs)	No	No	No
Solid State Drives (SSDs)	Yes	Yes	Yes
Secure bonding for all internal connectors	No	Yes	Yes
Screws with enhanced thread locking	No	Option	Yes
Tropicalized electronics	No	Option	Yes
Shock & vibration-resistant electronic cards	No	No	Yes
Electronic Core on stiffener	No	No	Yes

Environmental performances

	Industrial	Rugged	Military
Operating Temperature	0°C to +50°C (+32°F to 122°F)		-10°C to +50°C (+14°F to 122°F) MIL-STD-810G, Method 502.5, Procedure II, 4 hours MIL-STD-810G, Method 501.5, Procedure II, 12 hours
Storage Temperature	-20°C to +70°C (-4°F to +158°F)		-40°C to +75°C (-40°F to +167°F) MIL-STD-810G, Method 501.5, Procedure I, 4 hours
Operating Relative Humidity Range	5% to 90%, non condensing, at +35°C (+95°F)		95% RH at +40°C EN 60068-2-3, Test Cab: +40°C ±2°C (+104°F ±3.6°F), 95% RH, 10 days
Storage Relative Humidity Range	5% to 95%, non condensing, at +45°C (+113°F)		95% at +25°C to 55°C (+77°F to +131°F) EN 60068-2-30, Test Db, Variant 2: +25°C ±3°C to +55°C ±2°C (+71.6°F ±3.6°F to +127.4°F ±3.6°F), 95% ±4% RH, 6 cycles, 24 hours per cycle
Operational Atmospheric Pressure Range	650 hPa to 1100 hPa		550 hPa to 1100 hPa
Shock Resistance	15g for 11ms across 6 axes with SSD	20g for 11ms across 6 axes with SSD	20g for 18ms across 6 axes with SSD MIL-STD-810F, method 516.5, procedure I
Vibration Resistance	5 Hz to 100 Hz at 0.8g	5 Hz to 300 Hz at 0.8g	MIL-STD-167-1A No critical frequency under 100Hz Endurance @ 33Hz, 1g, 2 hours
Random Vibrations	5 Hz to 500 Hz at 0.8g	5 Hz to 500 Hz at 1g	MIL-STD-810F method 514-5, procedure I 5 Hz to 2000 Hz at 18 m/s ² , 8 hours per axis, 2.5 (m/s ²) ² /Hz max PSD
Acceleration Tolerance: Emergency Landing	5g		8g
Acceleration Tolerance: Transportation	3g		4.5g
EMC	CE Mark Class B (EN 61000-6-2, EN55022, EN 55024)		
Electrical Safety Standards	EN 62368-1		
Surge immunity	EN 61000-4-5, STANAG 1008		
Susceptibility to Radiated Interferences	-	-	NRS01, NRS02, NRS04 tests of AECTP-500
Radiated Electromagnetic Emissions	-	-	NRE01, NRE02 tests of AECTP-500
Susceptibility to Conducted Interferences	-	-	NCS01, NCS07, NCS08, NCS09, NCS11, NCS12, NCS13 tests of AECTP-500
Conducted Electromagnetic Emissions	-	-	NCE01, NCE02, NCE04, NCE05 tests of AECTP-500
External Enclosure Grounding	10 mΩ @ 1A	5 mΩ @ 5A	5 mΩ @ 10A
Internal Enclosure Grounding	-	-	10 mΩ @ 10A
Noise Level at Full Speed	70 dB(A)		

Technical specifications

	S2U5	S2U5.5
Processor System		
Processor	Up to 2x Intel® Xeon® Scalable processors supporting up to 26 cores per socket	Up to 2x Intel® Xeon® Scalable 5 th generation processors supporting up to 52 cores per socket
Supported processors (partial list)	2x Intel® Xeon® Platinum 8160T (24 cores, 48 threads, 2.1 GHz) 2x Intel® Xeon® Gold 6252N (24 cores, 48 threads, 2.3 GHz) 2x Intel® Xeon® Gold 6230R (26 cores, 52 threads, 2.1 GHz) 2x Intel® Xeon® Gold 6138 (20 cores, 40 threads, 2.0 GHz) 2x Intel® Xeon® Gold 6130 (16 cores, 32 threads, 2.1 GHz) 2x Intel® Xeon® Silver 4209T (8 cores, 16 threads, 2.2 GHz) 2x Intel® Xeon® Silver 4110 (8 cores, 16 threads, 2.1 GHz) 2x Intel® Xeon® Bronze 3106 (8 cores, 8 threads, 1.7 GHz)	2x Intel® Xeon® Gold 6538N (32 cores, 64 threads, 2.1 GHz) 2x Intel® Xeon® Gold 6530 (32 cores, 64 threads, 2.1 GHz) 2x Intel® Xeon® Gold 5520+ (28 cores, 56 threads, 2.2 GHz) 2x Intel® Xeon® Silver 4516Y+ (24 cores, 48 threads, 2.2 GHz) 2x Intel® Xeon® Silver 4510T (12 cores, 24 threads, 2.0 GHz) 2x Intel® Xeon® Bronze 3508U (8 cores, 8 threads, 2.1 GHz)
Memory	6x DDR4 ECC Reg 2666 MHz, up to 768 GB	16x DDR5 ECC Reg 4800 MHz, up to 4 TB
Chipset	Intel® C621 PCH	Intel® C741
Expansion Slot		
PCI/PCIe	4x PCIe 3.0 x16 low-profile 3x PCIe 3.0 x8 low-profile	5x PCIe 5.0 x16 low-profile 1x PCIe 5.0 x8 low-profile
PCI/PCIe with Riser Card	3x PCIe 3.0	3x PCIe 5.0
M.2	No	2x M.2 M key (PCIe 5.0 x4)
Management		
BMC	AST2500 supports iKVM, IPMI & Redfish	AST2600 supports iKVM with dedicated LAN, IPMI & Redfish
Data Storage		
Storage Drive	3x 3.5" bays for up to 9x 2.5" SATA/SAS SSD or 6x NVMe SSD	
General I/O		
Ethernet	2x 1Gb Base-T Ethernet	2x 10Gb Base-T Ethernet
Front I/O	2x USB 3.0 4x status LED (Power, Disk, Ethernet, Redundant PSU Fault) 3x switches (Power On/Off, Reset, Redundant PSU Alarm Reset)	
Rear I/O	4x USB 3.0	
Display	1x VGA D-Sub (up to 1920x1200)	1x VGA D-Sub
Security & Hardware Control		
Monitoring	Optional Power Supply monitoring through PM Bus	
TPM	TPM 1.2 & 2.0 (optional)	TPM 2.0
Security	Top cover intrusion detection switch Watchdog / NMI	
Power	*with optional PM Bus monitoring	
Single AC	550W, 90V-264V AC High Efficiency*	
Redundant AC	2x 1kW, 90V-264V AC High Efficiency*	
Single DC	460W, 18V-36V DC High Efficiency 550W, 36V-72V DC High Efficiency	
Redundant DC	2x 500W, 36V-72V DC High Efficiency*	
Mechanical		
Material	Marine grade 316L stainless steel	
Size	Rackable 2U, 400mm (15.74") depth (EN 60297-3-100 compliant)	
Weight	Industrial & Rugged grade: 13 kg (28.66 lb) / Military grade: 14 kg (30.86 lb)	
Software		
OS Support	Microsoft Windows Server 2012 R2 Microsoft Windows Server 2016 Microsoft Windows Server 2019 1809 Linux Red Hat (32/64 bits) VMWare ESXi	Microsoft Windows Server 2019 Microsoft Windows Server 2022 Linux Red Hat Enterprise 8.7 Linux Red Hat Enterprise 9.1 / 9.2 Oracle 8.7 SUSE Linux Enterprise Server 15 SP4 Ubuntu 22.04.1 Server VMWare ESXi 8.0