MADE IN E.U.

S1U5 & W1U5.3

1U RUGGED SERVERS & WORKSTATIONS

DESIGNED FOR MISSION-CRITICAL APPLICATIONS

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

DEVELOPED & DESIGNED IN FRANCE

+33 1 69 88 43 00
www.aplus-defense.com
defense-securite@aplus-defense.com

APLUS
DEFENSE & SECURITY

SOLUTIONS

Defense & Security

The S1U5 and W1U5 series are the ultra-compact, high-performance solutions in APLUS Système Automation's rugged servers and workstations line.

Performance, Reliability, and Ruggedness

The S1U5 and W1U5 are ideal for Industrial and Military applications that need military-grade performance, reliability, and ruggedness. Both systems provide an exceptional performance/power consumption ratio in an ultra-compact form factor.

Scalable and Versatile

The S1U5 and W1U5 offer the ideal computing solution for Industrial, Heavy Industrial, or Military applications. Users can choose the options that best fit their needs, making it easy to adapt the base configuration to various requirements. Depending on the application, a range of power supply options is available to ensure compatibility with different environments.

Designed for mission-critical applications

Our Servers and Workstations 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:

- 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

APLUS Système Automation
7 rue d'Alembert, ZAC de la Noue Rousseau, Techniparc
91240 Saint-Michel-sur-Orge - FRANCE

1U Server & Workstation

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	61 dB(A)		

Phone: +33 (0)1 69 88 43 00
Email: defense-securite@aplus-defense.com
Website: www.aplus-defense.com

APLUS DEFENSE & SECURITY

Technical specifications

	S1U5	W1U5.3	
Processor System			
Processor	Intel® Xeon® D Skylake processors, supporting up to 12 cores	Intel® Core™ i3/i5/i7/i9, Pentium® or Celeron® processors 12th, 13th & 14th generation, supporting up to 24 cores	
Supported processors (partial list)	Intel® Xeon® D-2143 (8 cores, 16 threads, 3.0 GHz) Intel® Xeon® D-2163 (12 cores, 24 threads, 3.0 GHz)	Intel® Core™ i9-13900TE (24 cores, 32 threads, 5.0 GHz) Intel® Core™ i7-13700TE (16 cores, 24 threads, 4.8 GHz) Intel® Core™ i5-13500TE (14 cores, 20 threads, 4.5 GHz) Intel® Core™ i3-13100TE (4 cores, 8 threads, 4.1 GHz) Intel® Pentium® Gold G7400TE (2 cores, 4 threads, 3.0 GHz) Intel® Celeron® G6900TE (2 cores, 2 threads, 2.4 GHz)	
Memory	DDR4 ECC, up to 256 GB	2x DDR5 DIMM 5800MHz ECC/non-ECC, up to 64GB	
Chipset	System On Chip (SoC)	Intel® R680E/Q870E	
Expansion Slot			
Interface	1x PCIe 3.0 x16	1x PCIe 5.0 x16	
Network			
Ethernet	2x 10GbE	2x 2.5GbE	
TPM	TPM 2.0	TPM 2.0 (optional)	
Management			
	ASPEED AST2500 supports IPMI 2.0 & iKVM (dedicated RJ45) NMI Programmable via Software from 1 to 255 seconds Watchdog	NMI Programmable via Software from 1 to 255 seconds Watchdog	
Data Storage			
Storage Drive	Up to 3x 2.5" SATA/SAS SSD or 2x NVMe SSD		
General I/O			
Front I/O	2x USB 3.0 3x status LED (Power, Disk activity, Ethernet activity) 2x Switches (Power On/Off, Reset)	2x USB 3.1 3x status LED (Power, Disk activity, Ethernet activity) 2x Switches (Power On/Off, Reset)	
Rear I/O		4x USB 3.2 4x USB 2.0 2x RJ45 2.5GbE	1x line-out 1x mic-in
Display	1x VGA	1x HDMI 1x DisplayPort 1.4 @4K	
Security & Hardware Control			
Security	Top cover intrusion detection switch		
Power			
Single AC	300W, 90V-264V AC Full Range, 47-63Hz		
Single DC	250W, 18V-36V DC 300W, 36V-72V DC		
Mechanical			
Material	Marine grade 316L stainless steel		
Size	Rackable 1U, 300mm (11.81") depth (EN 60297-3-100 compliant)		
Weight	6.8 kg (14.99 lb)		
Software			
OS Support	Microsoft Windows Server 2012 R2 & 2016 Linux Red Hat (64 bits) VMWare ESXi Win Hyper-V server	Microsoft Windows 10 LTSC 2021 (IoT Enterprise) Linux Ubuntu Linux Red Hat Enterprise Linux Fedora Workstation Linux openSUSE	