The Benefits of 6U in a 3U VPX World

How 6U Can Grow Your Potential

The Open Group FACE® and SOSA® Consortia 2025 Technical Interchange Meeting (TIM), by

Christal Sumner, Brandon Jann, Tom Roudabush and Ken Prager of Raytheon RTX & Matthew Alexander of Mercury Systems

October 2025

Table of Contents

Executive Summary

For the embedded computing industry, OpenVPX (VITA 65.0) offers two primary form-factors, 3U and 6U. While many in the industry continue to select the 3U format as the default option for their applications, the 6U format offers many potential advantages in terms of compute density (i.e. compute power to board area ratio) and overall data bandwidths. Despite this, 3U continues to dominate the market, bolstered by robust availability for specific uses and rapid growth of technical refresh options for future upgrades. With recent cooling standardizations in 6U, such as Liquid Flow Through (LFT) per ANSI/VITA 48.4[2] and Air Flow Through (AFT) per ANSI/VITA 48.5[3] or ANSI/VITA 48.8[4], today's refined 6U format does not share the burdens of conduction cooled 6U modules of yesterday. The 6U format offers superior advantages over and above the 3U format in several areas including board size (i.e. real estate) efficiency, more available I/O for compute intensive profiles, and refined cooling standard options not available for 3U.

With the advantages of 6U, designers may want to reconsider their options and break from the status quo. They may want to rethink the limits of the available 3U form-factor and refocus on providing an optimum design. This paper will discuss the seemingly forgotten benefits of the 6U form-factor which can provide better overall performance, Size Weight and Power (SWaP), and interconnect support. The 6U form-factor has multiple benefits that cannot be accommodated with the limitations of the 3U form-factor, including reduced price per Floating Point Operations (FLOPs), increased throughput and I/O, real estate and volume efficiency, thermal cooling efficiency, and reduced weight, all of which will be described in this paper. As a VPX community, we are doing ourselves a disservice if we silo products exclusively into 3U form-factors. In an effort to share The Open Group vision of **Boundaryless Information Flow** and to achieve sensor architecture superiority, 6U form-factors should be highly considered to optimize design architectures especially for high performance sensor applications.

1 Uses Cases for both 3U and 6U

To meet the goals of Modular Open System Approach (MOSA), the industry needs to be able to address different use cases ranging from low performance applications such as communication (e.g. comms radios) and electro-optical infrared (EO/IR) applications to high performance applications such as Signals Intelligence (SIGINT), Radar (e.g. airborne fire control Radar), and everything in between. The Open Group Sensor Open System Architecture® or SOSA® Technical Standard provides the standard framework architecture for multiple sensor types including SIGINT (ELINT & COMINT), Radar, Electronic Warfare (EW), EO/IR and more. Both 3U and 6U form-factors defined per the ANSI/VITA 48.0 hardware standards meet the needs of use cases ranging from low to high end performance ranges. As the embedded computing industry begins to roadmap the Next Generation VPX VITA 100 higher Pulse Amplitude Modulation 4-level (PAM4) speeds, more I/O and increased performance, there is significant rationale for maintaining both the 6U and 3U form-factors to address the broad range of sensor applications covered by SOSA®. VPX was not intended to be one-size-fits-all and we should avoid shoehorning all use cases into a 3U form-factor. Certain applications for Comms, Navigation and EO/IR fit nicely within the 3U form-factor, while applications like SIGINT, Surveillance and Fire Control Radar fit nicely within the 6U form-factor. For future Next Generation VPX applications, a 4U form-factor may provide an additional practical option for many cases where high performance, throughput, size, weight, and power (SWaP) efficiency, as well as I/O selection are all of high importance.

While many in the industry continue to select the 3U format as the default option for their applications, or see a push from their customers for 3U, there are several important use cases where the 6U format offers many potential advantages in terms of compute density and overall data bandwidths. The purpose of this paper is to provide awareness on the advantages of 6U and identify a few shortcomings of the 3U format. Figure 1 provides examples of various sensor use cases for comparison including Communications, EO/IR, EW, Radar, Navigation, and SIGINT. Processing throughput is generally proportional to sensor data and applications are sorted from low data rate/throughput where low performance is required, to high data rate/throughput where high performance is required. Low performance use cases are better suited for 3U while high performance use cases are better suited for 6U. While the processing throughput requirements for Comms and Navigation Radar uses case shown on the left side of the bar graph may not be extremely intensive and can easily be supported by 3U modules, the Modern Fire Control Radar and SIGINT use cases shown on the right side of the bar graph are best supported by 6U modules because they require compute heavy throughput in the hundreds of Tera-FLOPS of data processing using Signal Processors and Graphics Processing Unit (GPU) type modules where every detail of system efficiency counts. The compute heavy requirements in these applications support new and emerging algorithms and simultaneous beamforming where data rates and throughput are growing exponentially.

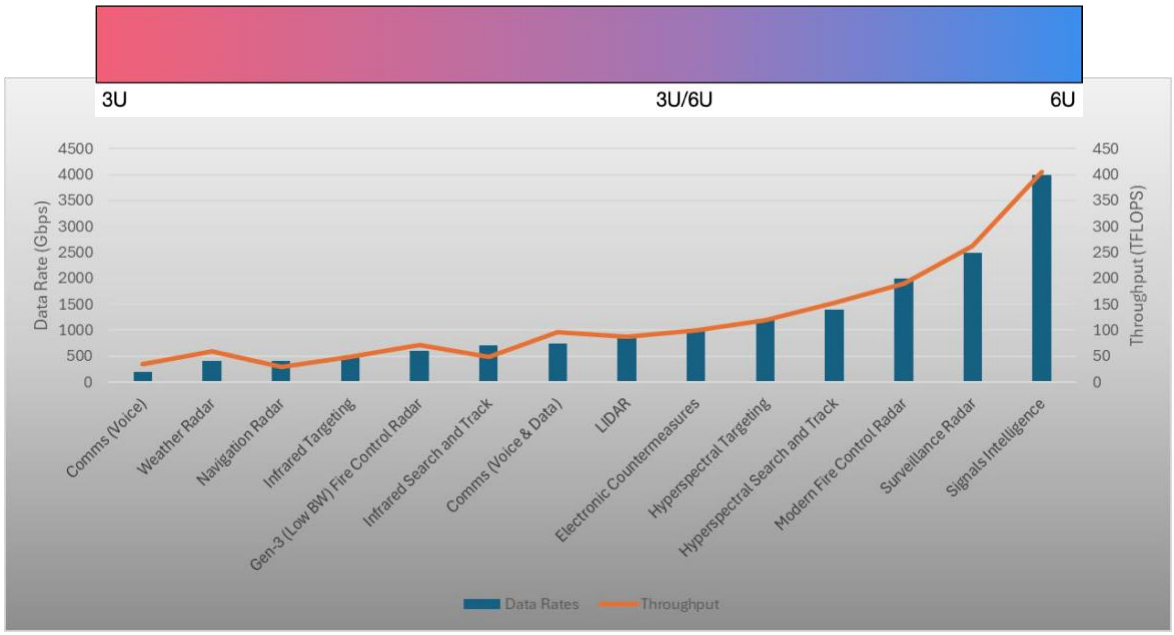


Figure 1. Multi-Function Spectrums for Today's Military Applications

2 I/O and Data Plane Usable Pin Efficiencies

2.1 General I/O differences

The 6U form-factor provides significantly more available I/O due to four additional backplane connectors. This allows for a reduced number of payload module profile types by combining the I/O and compute intensive profiles into one module type. Additionally, the 6U switch module profile provides a notable increase by more than doubling the data plane support while still providing control plane and optical/coax interfaces. The 3U form-factor has a total of 3 connectors, P0-P2 for a total of 40 wafers. In comparison, the 6U form-factor has a total of seven connectors, P0-P6 with a total of 104 wafers. Both 3U and 6U use the utility connector, P0, in the same way for power, controls, and discretes spanning a total of 8 wafers. Calculating the efficiency of the connector I/O for controls and discretes, not including the power, 3U uses 32 of 40 wafers for 80% efficiency. In comparison, 6U uses 96 of 104 wafers, which equates to over 92% efficiency. With this extra 12% efficiency in I/O comes improved flexibility in the usage of the I/O signals for link fabric.

The assessment above assumes that all signals are available as I/O. In reality, slot and module profiles limit the use of the I/O. The SOSA specification outlines what interfaces are allowed to be routed to the various modules and slots via various profiles. As outlined below, with the increased I/O pin efficiencies 6U SOSA Modules provide more interfaces than two comparable 3U SOSA modules.

2.2 Comparing Specific Profiles

Combining two 3U SOSA compute intensive Plug-In Cards (PICs), or modules, as shown in Figure 2, does not provide the same 100GbE Data Plane I/O capability as a single 6U SOSA PIC (module). Additionally, combining two 3U SOSA switch PICs (modules), as shown in Figure 3, does not provide nearly the same I/O capability as a single 6U SOSA PIC.

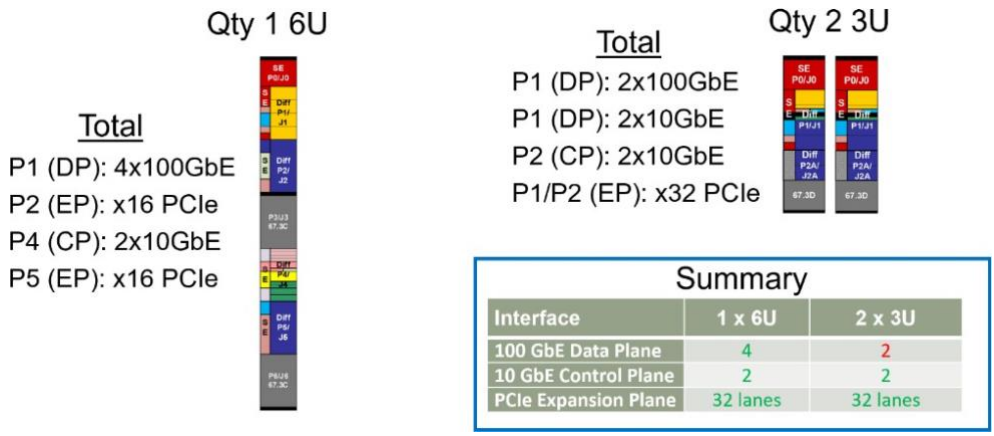


Figure 2. Compute Intensive Profile Comparisons

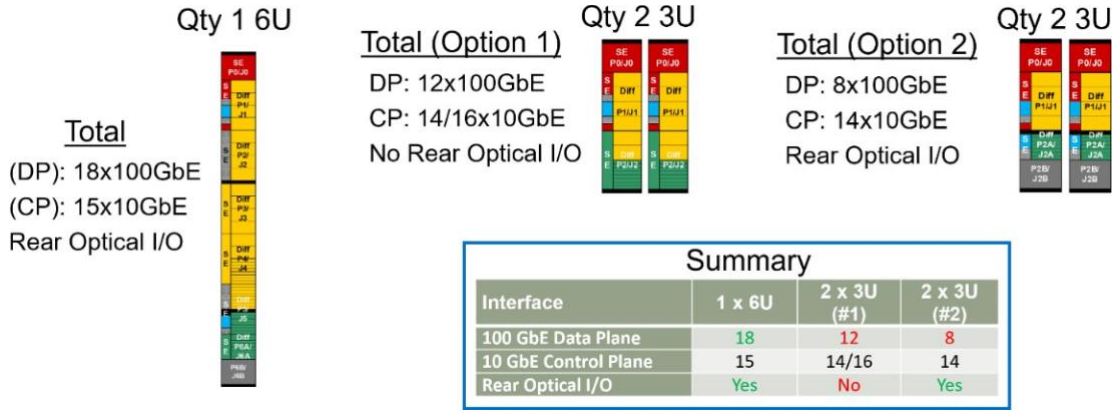


Figure 3. Switch Profile Comparisons

2.3 Optical Profiles

A 6U SOSA switch profile allows for more copper I/O plus optical interconnect compared to 3U. Upon reviewing the industry offerings for rear optical 3U switch options, nothing was found as of the development of this white paper. The only offerings found are for front panel I/O. When considering that front panel I/O is not a robust solution for military tactical applications where loose optical fiber harnesses are susceptible to breakage, the long-term reliability and handling risks make it a less than desirable solution. Additionally, front panel optical interconnect does not support 2-Level Maintenance or Liquid Flow Through applications where the front panel must be enclosed.

3 Mechanical Efficiencies of 6U

3.1 Comparision Between 6U and 3U Form-factors

The size of the 6U form-factor provides more than double the 3U card usable area, or "real estate" allowing the use of higher performing processor chipsets (e.g. Xeon D), increased memory support, switches and necessary network interface cards (NICs) to provide a full complement of data, control, and expansion plane interfaces. The usable area of a 3U conduction cooled (CC) card is only approximately 36% that of a 6U conduction cooled card per VITA 48.2[5], as shown in Table 1 and Figure 4. When considering the various different VPX module cooling form-factors besides conduction cooling, note that Liquid Flow Through (LFT) per VITA 48.4, and Air Flow Through (AFT) per VITA 48.5 and VITA 48.8 all have varying degrees of usable real estate due to the hardware infrastructure areas for items such as wedge retainers, heatsink allocation and quick disconnects.

Table 1. Comparison of Usable Area of 6U vs. 3U VPX Cards in Different Cooling Factors

VPX Module Area Normalized to 3U CC and 6U CC Modules									
	PCB Only Reference		VITA 48.2		VITA 48.4	VITA 48.5		VITA 48.8	
VPX Module	6U PCB	3U PCB	6U CC	3U CC	6U LFT	6U AFT	3U AFT	6U AFT	3U AFT
Envelope									
Height [in]			9.187	3.937	9.187	9.550	4.300	9.481	4.231
Depth [in]			6.713	6.713	6.740	6.712	6.712	6.717	6.717
Area [in^2]			**61.669**	**26.428**	**61.920**	**64.104**	**28.863**	**63.684**	**28.418**
Usable PCB									
Height [in]	9.187	3.937	8.457	3.207	8.277	8.457	3.147	8.941	3.691
Depth [in]	6.299	6.299	5.722	5.551	5.827	5.827	5.827	5.778	5.778
Area (one side) [in^2]	57.869	24.799	48.942	17.803	48.228	49.277	18.337	51.657	21.325
Indicators *(normalized to 6U CC)*									
Usable Area (UA) [%]			**79**	**67**	**78**	**77**	**64**	**81**	**75**
Specific Area (SA3) wrt 3U	**2.33**	**1.00**	**2.75**	**1.00**	**2.71**	**2.77**	**1.03**	**2.90**	**1.20**
Specific Area (SA6) wrt 6U	**1.00**	**0.43**	**1.00**	**0.36**	**0.99**	**1.01**	**0.37**	**1.06**	**0.44**

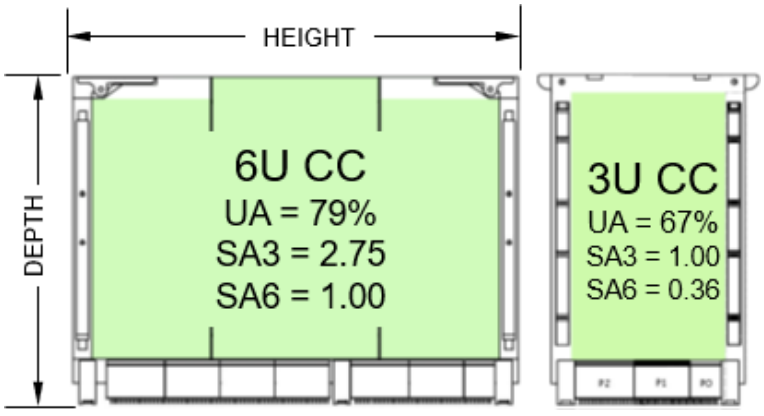
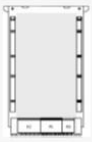
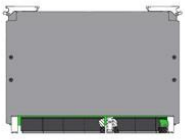


Figure 4. Comparison of Usable Area of a 6U vs. 3U Conduction Cooled VITA 48.2 VPX Card

3.2 Thermal Cooling Standards

Refined cooling standards were created to address the growing need to thermally regulate these higher performing modules. Currently, 6U offers improved thermal solutions with well-defined LFT cooling per VITA 48.4 has only been standardized for 6U modules and provides improved thermal solutions with capability to cool over 350 Watts compared to the thermal capability of 3U options closer to 100 Watts. As described in Table 2 below, the advantage of 3U is for conduction cooled designs which have a shorter thermal path to the chassis cooling edge because it is physically smaller than 6U. The advantage of 6U is the ability to cool higher powered modules because 6U is capable of matched or increased thermal density (power dissipation per usable area) compared to 3U. While both LFT and AFT provide the ability to bring the cooling fluid closer to the dissipating components through an internal heatsink flow path, more components can be placed in the larger usable area of the 6U. The LFT and AFT solutions are not constrained by the need to place the high power dissipating components near the rail. As the industry continues to support the growing use of highly capable GPUs and CPUs, the total board power dissipation continues to grow, and the thermal limitations of conduction cooled modules become more apparent. Although 3U performs better with CC designs, LFT and AFT make substantially higher power dissipating designs feasible. 6U LFT removes those barriers and opens up more options when high performance is critical to the system use case.

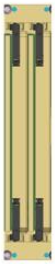
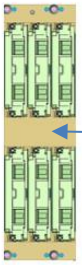
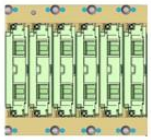
Table 2. Thermal Summary of 6U vs. 3U

Thermal Design	Standard	Optimal Form Factor	Explanation
Conduction Cooled **CC**	VITA 48.2	**3U** 	Shorter thermal path to cooling chassis edge Lower temperature rise Lower thermal resistance
Air Flow Through **AFT**	VITA 48.5 VITA 48.8	**6U** 	Cooling fluid closer to dissipating components results in lower temperature rise; Capable of matched or increased thermal density
Liquid Flow Through **LFT**	VITA48.4	**6U** 	Thermal solution for high power dissipating designs; Cooling fluid closer to dissipating components results in lower temperature rise; Well defined for 6U, but not defined for 3U

3.3 Unit Volume Comparisons

For high performance systems, the more modules that are needed for the system, the more efficient the 6U selection becomes. From a volume perspective, a 3U system consumes 150% of the total volume to deliver the same functional real estate for circuitry as an equivalent 6U system. Three 3U modules could be replaced by a single 6U module. In a 3U stacked chassis configuration as shown in Table 3, a center support structure is required to support the second row of modules, which does not directly improve performance but adds weight to the enclosure. A 3U single row configuration without the supporting center structure can become excessively long to match the equivalent 6U performance. From a volume standpoint, the 3U chassis, whether side by side or stacked increases in size faster with the addition of more modules compared to the 6U side by side chassis as described in Figure 5.

Table 3. Module Enclosure Comparison

6U / 3U Module Enclosure Comparison			
Module Height	**6U**	**3U**	**3U**
Equivalent Performance	2 Modules	6 Modules	6 Modules
Module Installation	Side-by-side	Stacked, Side-by-side	Side-by-side
Image	 2"W x 11.16"H x 9.42"D	 3"W x 11.16"H x 9.42"D	 6"W x 5.91"H x 9.42"D
Volume Comparison	210.3 in^3 (Baseline)	315.4 in^3 (1.5 x Baseline)	334.0 in^3 (1.6 x Baseline)
Enclosure Weight	1.15 lb (Baseline)	3.20 lb (2.8X Baseline)	3.44 lb (3X Baseline)
Backplane Weight	0.93 lb (Baseline)	1.47 lb (1.6X Baseline)	1.46 lb (1.6X Baseline)
Module Weight	6.16 lb	9.6 lb (1.55X Baseline)	9.6 lb (1.55X Baseline)

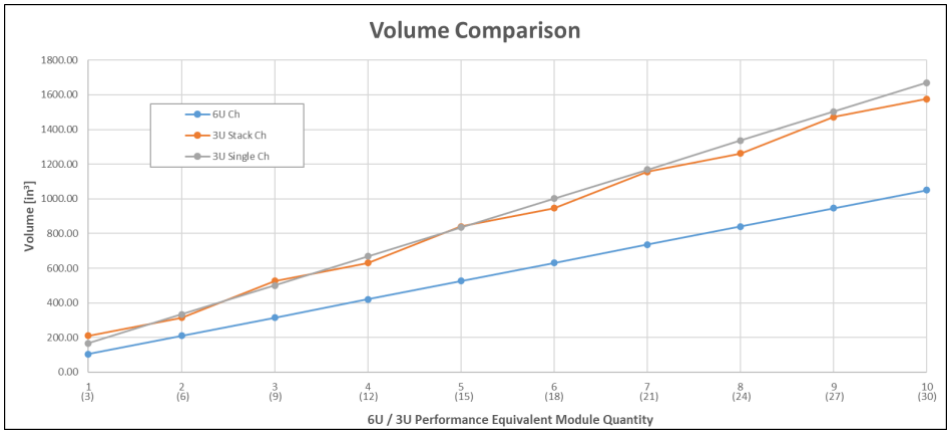


Figure 5. Comparison of Volume Between 6U, 3U Stacked and 3U Single Row Chassis

3.4 Unit Weight Comparisons

For both stacked and single row 3U configurations, the chassis is measurably heavier due to the excess material weight needed for the center structure or the additional length to contain the additional 3U modules to match the performance of the 6U modules. The 3U backplane is also notably heavier due to increased size to support the additional 3U modules. The advantage of a lower weight of a 3U module at approximately 1.6 pounds compared to a 6U module at approximately 3.08 pounds is not realized because additional 3U modules are required to match the performance of a 6U module as described in Figure 6.

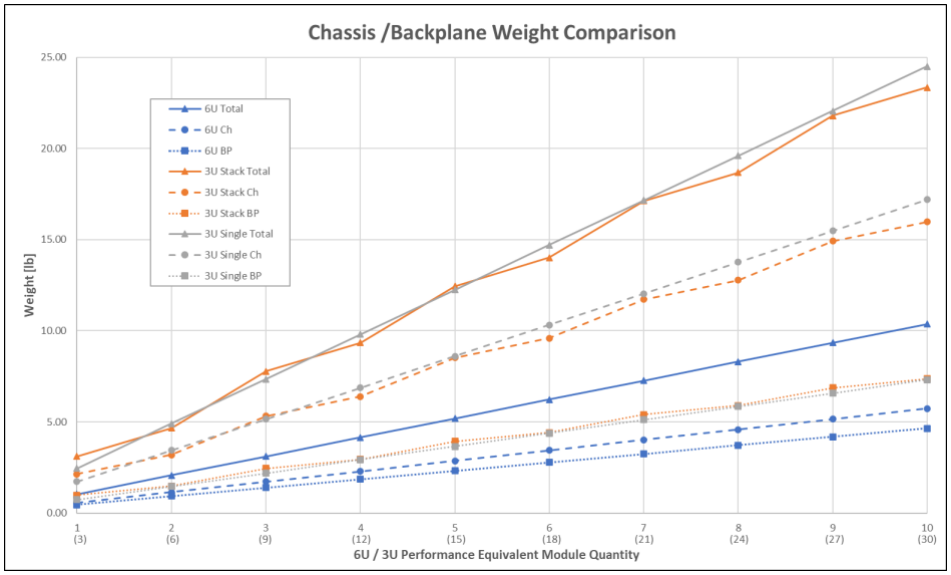


Figure 6. Comparison of Chassis Weight Between 6U, 3U Stacked and 3U Single Row Chassis

4 6U Exemplar Architecture and its Equivalent 3U

At face value, a combination of multiple 3U cards may appear to be lower SWaP, however upon deeper inspection, the use of 6U cards can actually be more efficient when considering volume per FLOP assessment. For example, the equivalent performance of ten 6Us compared with ten 3U cards proves that the 6U form-factor provides much improved memory and I/O, and roughly equivalent throughput. Adding 3U payload modules to a system has a ripple effect of additional switch modules and power supply modules to manage the I/O and adequately power the additional 3U modules. The critical threshold for converting from 3U to 6U is about six 3U modules. This is driven by PCB real-estate, I/O quantity and price per FLOP as previously mentioned.

4.1 High Performance Compute Intensive Use Cases

Figure 7, Figure 8, Figure 9, and Figure 10 illustrate exemplar 6U and 3U architectures applicable to a high performance, compute intensive use case applications such as tactical airborne Fire Control Radar, surveillance radar or signals intelligence (SIGINT). The design was balanced to provide both sufficient data movement bandwidth – for both data ingest and distribution to processing resources – and sufficient throughput for signal processing. The overall performance aligns with recent operational requirements, while avoiding configurations that would be considered extreme.

All modules incorporated into this architecture were selected from Commercial Off-The-Shelf (COTS) vendors, focusing on products either currently available or under development. After establishing a 6U baseline, equivalent 3U architectures were constructed to assess the tradeoffs required to achieve similar levels of performance. Three equivalency conditions were considered: system volume, computational throughput (FLOPS), and Ethernet bandwidth. As with the 6U system, only COTS modules were considered for the 3U alternatives.

In summary, both 6U and 3U architectures were designed to enable direct comparison across selected performance measures.

4.2 6U Architecture

Referring to Figure 7, the baseline 6U system consists of 12 modules. Command and control functions are provided by a single Data Processing (DP) module, the Mercury LDS6528, which is currently in development. This module includes two mezzanine sites to accommodate custom interface cards.

The signal processing capability is delivered by four Mercury HDS6606 Signal Processing (SP) modules, which are currently in development, each directly paired with a WOLF-2538 Graphics Processing Unit (GPU) module. Dedicated PCIe interconnects between the SP and GPU modules are reserved for high-speed data transfer.

System networking is supported by a single Annapolis WP6E10 switch module, configured with six 100 GbE external blind mate optical ports and eighteen 100 GbE internal ports. Power is provided by two AirBorn VPX6U23S01 supply modules.

This baseline 6U configuration establishes the reference point for subsequent comparisons and has been tailored to meet the performance requirements of modern defense applications.

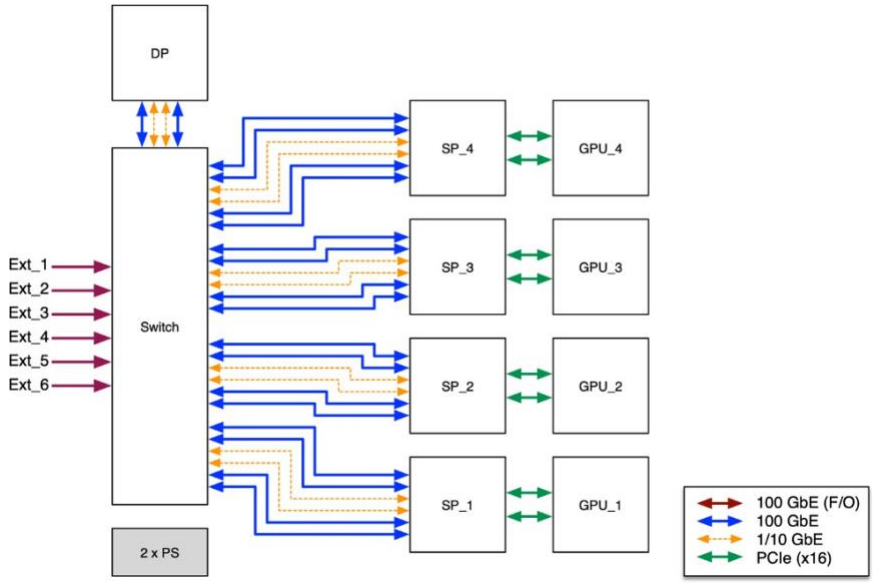


Figure 7. 6U Exemplar Architecture

4.3 3U Architecture (Equivalent Volume)

Referring to Figure 8, we configured a 3U architecture with the equivalent physical volume. In this case, the number of modules was doubled to 24. Command and control is managed by two X-ES XPedite7774 DP modules, each with a single mezzanine site, resulting in the same total mezzanine capacity as the 6U baseline.

Signal processing is achieved using eight X-ES XPedite7872 SP modules, each paired with a WOLF-1537 GPU module. Networking is provided by two Annapolis WP3E10 switch modules, configured with six 100 GbE external front panel optical ports and eight 100 GbE internal ports. Four Milpower M4094 supply modules provide system power.

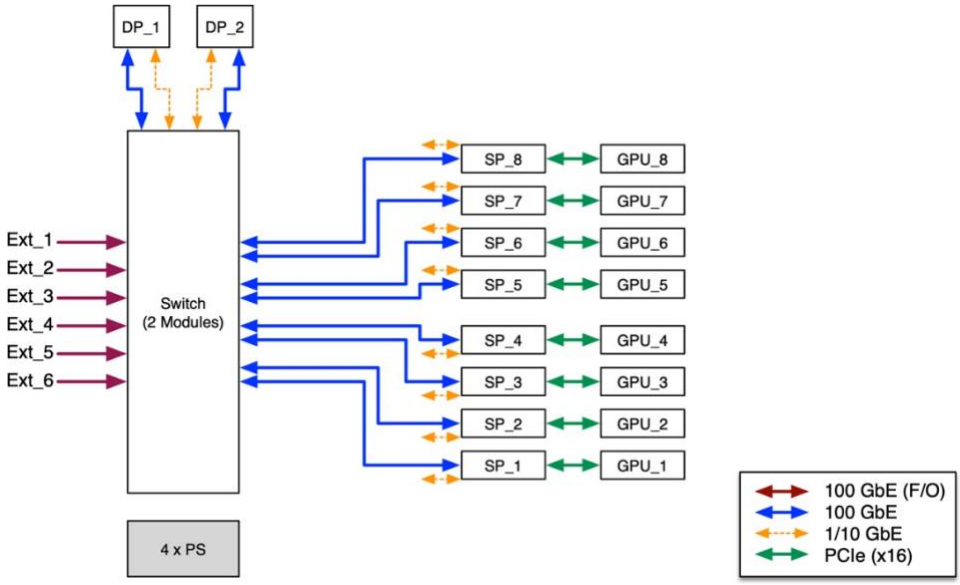


Figure 8. 3U Exemplar Architecture #1: Equivalent Volume

4.4 3U Architecture (Equivalent Throughput)

Referring to Figure 9, we configured a 3U architecture optimized for computational throughput. This required expanding the system to 34 modules. As in the equivalent-volume case, two X-ES XPedite7774 DP modules provide command and control.

Signal processing capacity was increased to twelve SP modules, each paired with a WOLF-1537 GPU module. Networking was scaled to three Annapolis WP3E10 switches, offering six 100 GbE external front panel optical ports and twelve 100 GbE internal ports. Power requirements were met with five Milpower M4094 modules.

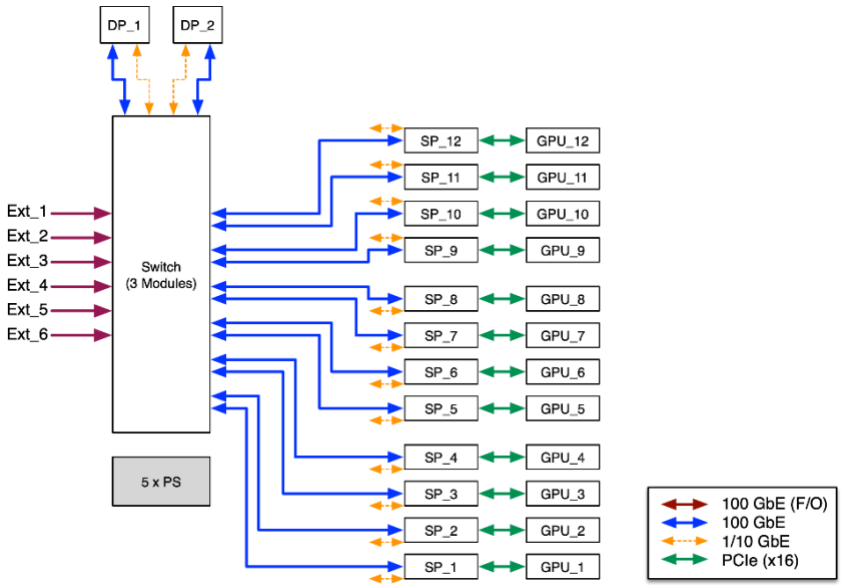


Figure 9. 3U Exemplar Architecture #2: Equivalent FLOPS

4.5 3U Architecture (Equivalent Bandwidth)

Referring to Figure 10, we configured a 3U architecture optimized for Ethernet bandwidth. This required further scaling the system to 44 modules. Command and control again relies on two X-ES XPedite7774 DP modules.

This system incorporates sixteen SP modules, each coupled with a WOLF-1537 GPU module. Network infrastructure consists of four Annapolis WP3E10 switch modules, supporting six 100 GbE external front panel optical ports and eighteen 100 GbE internal ports. System power is provided by six Milpower M4094 modules.

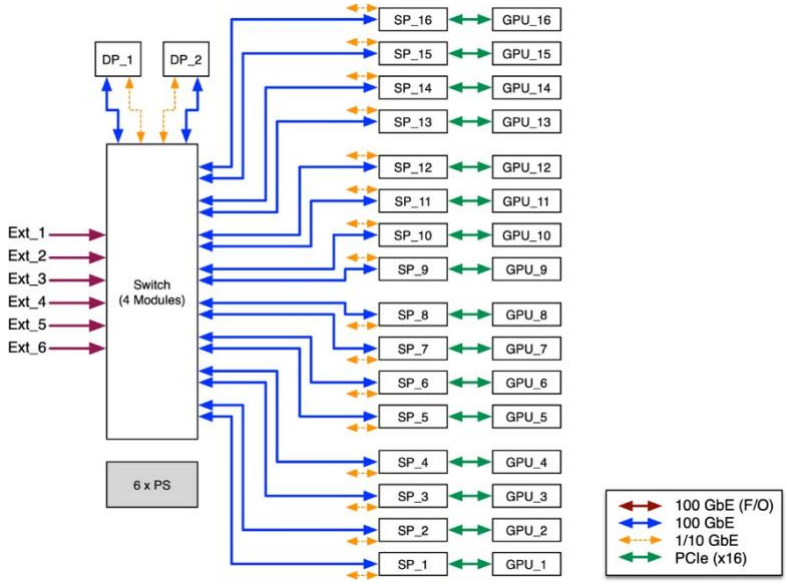


Figure 10. 3U Exemplar Architecture #3: Equivalent Input Bandwidth

4.6 Comparison of 6U and Equivalent 3U Architectures

Table 4 presents a summary comparison of the 6U baseline with the equivalent 3U systems, highlighting several tradeoffs. The 3U system with equivalent volume is heavier than the 6U design, and it delivers lower throughput and bandwidth. The 3U system optimized for throughput achieves computational parity, but only at the expense of greater SWaP requirements, while still providing less bandwidth. The 3U system optimized for bandwidth requires substantial scaling, resulting in significantly higher power consumption and system SWaP. Additionally, limitations in the 3U switch market require the use of front panel optics vs the more robust backplane blind mate options that 6U switches provide.

These results indicate that for high-performance applications, the 6U architecture represents the most effective balance of SWaP and performance.

Table 4. 6U vs 3U Summary

	6U Exemplar	3U Equivalent Volume (Double the 3U Modules)	3U Equivalent FLOPS (Same Total Throughput)	3U Equivalent Bandwidth (Same Input Ethernet)
Qty of Modules	12	24	34	44
Total Max Power Dissipation (Watts)	2582	2519	3681	4408
Unit Weight (lb Max)	85.0	107.9	137.3	166.5
Unit Volume (cubic inches)	108.0	108.0	153.0	198.0
Total Throughput (TFLOPS)	231	150	225	299
Input Ethernet Bandwidth (Gbps)	2400	1300	1850	2400

5 Conclusion

In conclusion, VPX was not intended to be one-size-fits-all and we should avoid shoehorning all use cases into a 3U form-factor. The 6U form-factor provides significantly more available I/O due to four additional backplane connectors, allowing for a reduced number of payload module profile types by combining the I/O and compute intensive profiles into one module type. Additionally, the 6U switch module profile provides a notable increase by more than doubling the data plane support while still providing control plane and optical/coax interfaces. From a Line Replaceable Unit (LRU) perspective compared to a 6U, a 3U unit with the equivalent volume is heavier, has less throughput, and has less bandwidth. Compared to 6U, a 3U unit with the equivalent throughput consumes more power, is heavier, takes up more volume, and has less bandwidth. Compared to 6U, a 3U unit with equivalent bandwidth consumes much more power, is much heavier, and takes up more volume.

In high performance system use cases such as SIGINT, and airborne fire control Radar where high performance data processing, throughput, SWaP efficiency, and I/O selection are all of critical importance, 6U is often the best choice. Users should consider the benefits of evaluating the use case first before automatically selecting a 3U form-factor.

6 Referenced Documents

(Please note that the links below are good at the time of writing but cannot be guaranteed for the future.)

Referenced documents list

[1] S251 Technical Standard for SOSA® Reference Architecture, Edition 2.0 (Snapshot 3) (S251), published by The Open Group, February 2025; refer to: https://publications.opengroup.org/sosa-library/s251

[2] ANSI/VITA 48.4-2022: Mechanical Standard for VPX REDI Liquid Flow Through Cooling; refer to: www.vita.com/Standards

[3] ANSI/VITA 48.5-2022: Mechanical Standard for VPX REDI Air Flow Through Cooling, 1.0" to 1.6" Pitches; refer to: www.vita.com/Standards

[4] ANSI/VITA 48.8-2022: Mechanical Standard for Electronic Plug-In Units Using Air Flow Through Cooling; refer to: www.vita.com/Standards

[5] ANSI/VITA 48.2-2022: Mechanical Standard for VPX REDI Conduction Cooling; refer to: www.vita.com/Standards

7 About the Authors

Christal Sumner, Raytheon:

Christal is Technical Fellow at Raytheon with over 20 years of experience in electronics packaging mechanical design. Her background spans embedded computing systems conforming to open standard architectures, namely high-performance radar processor units with high bandwidth throughput. She is a member of the Sensor Open System Architecture or SOSA and VITA (VME International Trade Association) consortiums and was lead editor and chair of the ANSI ratified VITA 48.4 industry standard for Liquid Flow Through VPX Plug-In Modules, published in 2018. She holds two patents in thermal design and VPX interconnect and is a hardware technical lead for several Radar processor units conforming to open architecture standards for airborne and ground based military systems.

Tom Roudabush, Raytheon:

Tom is a Senior Principal Electrical Engineer and recognized expert within the Raytheon and customer community for high-speed digital and processor designs with over 24 years of professional experience as a hardware engineer. Tom is a graduate of the University of Michigan with a BSE in Electrical Engineering.

Brandon Jann, Raytheon:

Brandon is a Technical Fellow who joined Raytheon in 1994 at Hughes Aircraft Company, El Segundo in 1994 and has continued his career as a Hardware Subject Matter Expert, Technical lead & Mechanical lead for several REX designs programs and processor design programs with Open VPX architecture VME and VPX. He is a standards consortium member of SOSA (Sensor Open System Architecture) and VITA (VME International Trade Association) and is a Raytheon Technical instructor teaching and authoring the mechanical portion of the Airborne Radar Receiver/Exciter System Design course.

Kenneth Prager, Raytheon:

Ken Prager is a Principal Engineering Fellow for Raytheon with 40 years of experience leading complex engineering programs. Ken currently serves as the Technical Director for the COARPs family of processor development efforts. Among key past assignments, Ken was the Chief Architect for the Gen6 Multi-Function Processor effort and Technical Director/Chief Engineer for an On-Board Processor. Ken was also the Processing Technology Area Director for Raytheon where he provided technical and managerial oversight for numerous Internal Research and Development (IRAD) projects across multiple mission areas. Ken has 12 patents filed and over 10 published papers.

The Benefits of 6U in a 3U VPX World

Matthew Alexander, Mercury Systems:

Matthew has a diverse work experience in the field of systems architecture and engineering. Matthew is currently serving as the Chief System Architect at Mercury Systems since June 2019. Prior to this, they worked at MIT Lincoln Laboratory for several years, where they held roles such as Assistant Group Leader, Embedded Systems Engineer, and Software Engineer. Matthew also gained experience as a Web Developer/Intern at Netquarks in 2002. Matthew Alexander attended Northeastern University from 1999 to 2004, where he obtained a Bachelor's degree in Computer Engineering Tech.

8 About The Open Group FACE® Consortium

The Open Group Future Airborne Capability Environment® Consortium or FACE® Consortium, was formed as a government and industry partnership to define an open avionics environment for all military airborne platform types. Today, it is an aviation-focused professional group made up of industry suppliers, customers, academia, and users. The FACE Consortium provides a vendor-neutral forum for industry and government to work together to develop and consolidate the open standards, best practices, guidance documents, and business strategy necessary for acquisition of affordable software systems that promote innovation and rapid integration of portable capabilities across global defense programs.

Further information on the FACE Consortium is available at www.opengroup.org/face.

9 About The Open Group SOSA® Consortium

The Open Group SOSA® Consortium enables government and industry to collaboratively develop open standards and best practices to enable, enhance, and accelerate the deployment of affordable, capable, interoperable sensor systems. The SOSA Consortium is creating open system reference architectures applicable to military and commercial sensor systems and a business model that balances stakeholder interests. The architectures employ modular design and use widely supported, consensus-based, nonproprietary standards for key interfaces.

Further information on the SOSA Consortium is available at www.opengroup.org/sosa.

10 About The Open Group

The Open Group is a global consortium that enables the achievement of business objectives through technology standards and open source initiatives by fostering a culture of collaboration, inclusivity, and mutual respect among our diverse group of 900+ memberships. Our membership includes customers, systems and solutions suppliers, tool vendors, integrators, academics, and consultants across multiple industries.

The mission of The Open Group is to drive the creation of Boundaryless Information Flow™ achieved by:

- Working with customers to capture, understand, and address current and emerging requirements, establish policies, and share best practices
- Working with suppliers, consortia, and standards bodies to develop consensus and facilitate interoperability, to evolve and integrate specifications and open source technologies
- Offering a comprehensive set of services to enhance the operational efficiency of consortia
- Developing and operating the industry's premier certification service and encouraging procurement of certified products

Further information on The Open Group is available at www.opengroup.org.