

CMOSS/SOSA Starter Kit

3U VPX System, Aligned CMOSS & the SOSA Technical Standard

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Key Features

- CMOSS/SOSA-aligned slot profiles
- Compact system for GCV platforms
- Natural convection cooling
- Includes A-PNT, VICTORY Network Switch, and I/O Intensive processor modules

Applications

- Ground Combat Vehicle Electronic Infrastructure
- Tactical Wheeled Vehicle Electronic Infrastructure



CMOSS/SOSA Foundation for Meeting MOSA Requirements

In support of DoD directives, such as MOSA, and emerging standards, including CMOSS, SOSA, and VICTORY, the CMOSS/SOSA Starter Kit from Curtiss-Wright Defense Solutions enables programs to kickstart their development cycle with a SWaP-optimized solution for demonstrations, aligned with CMOSS and SOSA Technical Standard 1.0.

Architecture Overview

The CMOSS/SOSA Starter Kit features a powerful Intel® single board computer (SBC), VICTORY Ethernet switch, and standards-based Assured-Positioning, Navigation, and Timing (A-PNT) module, packaged in a compact enclosure in alignment with CMOSS/SOSA standards.

The vehicle infrastructure capabilities provided by the CMOSS/SOSA Starter Kit are as follows:

VPX3-687: VICTORY Network Switch Module

- This integrated Ethernet switch provides 1GbE VICTORY network capabilities to the platform.

VPX3-673: A-PNT Module

- This integrated A-PNT card has an integrated CSAC, IMU, and GBGRAM Type-II SAASM/M-Code receiver. External network-enabled sensors can also be added and integrated with the pntOS software.

VPX3-1260: Intel 8th Gen Xeon Processor

- This integrated Intel 8th Gen Xeon E-2276ME single board computer provides general-purpose processing for hosting battle management software (JBC-P/MMC), in addition to other applications, in a virtualized environment.

All slot pinouts align with SOSA Technical Standard 1.0 to provide one I/O Intensive Compute module, one DP/CP Switch module, and one Radial Clock module hosting A-PNT functionality. This complement of modules provides all of the core vehicle CMOSS infrastructure to meet not only today's requirements, but the future's as well.

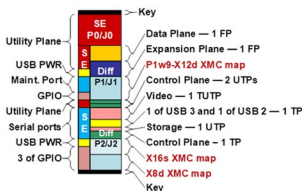


Figure 1: VPX3-1260 14.2.16 I/O Intensive

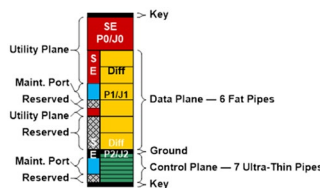


Figure 2: VPX3-687 14.4.14 DP/CP Switch

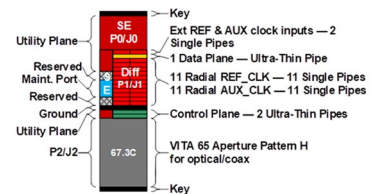
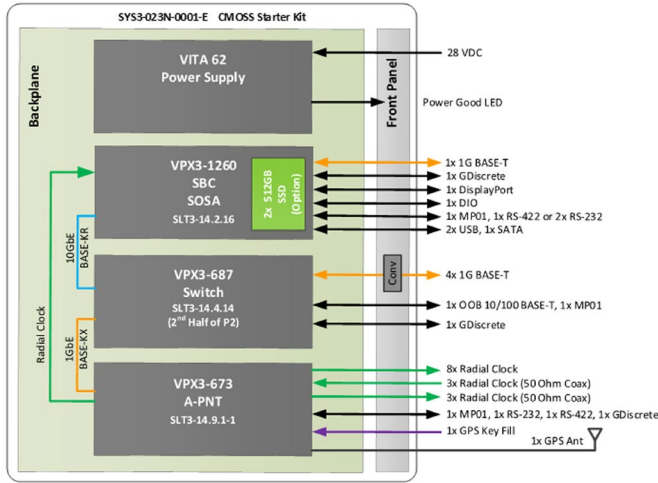


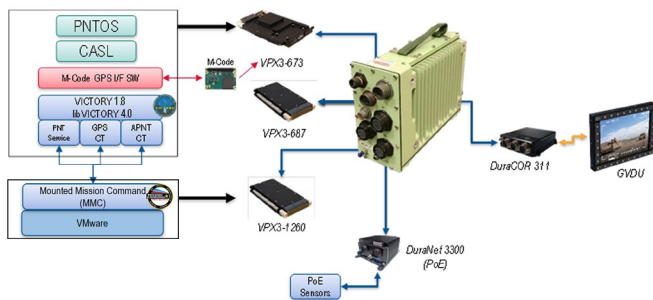
Figure 3: VPX3-673 14.9.2 Radial Clock



CMOSS/SOSA Starter Kit block diagram

Example Use Case

The example use case below was successfully demonstrated to the U.S. Army and is one of many examples of how easily the CMOSS/SOSA Starter Kit can be incorporated into a new or existing platform.



Specifications

Mechanical

- Dimensions: 10.77”L x 3.97”W x 7.97”H
- Mass: 14.9 lb

Thermal

- Cooling: Natural Convection

Slot Definition

- All slots conform to VITA 65.0 slot profiles defined in SOSA Technical Standard 1.0:
 - + SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16, I/O Intensive slot profile
 - + SLT3-SWH-6F1U7U-14.4.14, DP/CP Switch slot profile
 - + SLT3p-TIM-2S1U22S1U2U1H-14.9.2-2, Radial Clock slot profile
 - + Supports legacy SLT3p-TIM-2S1U22S1U2U1H-14.9.2-1 profile

Power

- Input Power: 28VDC per MIL-STD-1275
- Power Consumption: 100W (typical)

Backplane Interconnect

- 10 Gigabit Ethernet to processor slot
- 1 Gigabit Ethernet to timing slot
- Radial clock connectivity to processor slot

Additional Features

- Quick access card cage panel
- Standard MIL-DTL-38999 connectors for external I/O
- 0.8” slot pitch

Ordering Information

TABLE 1		CMOSS/SOSA Starter Kit
PART NUMBER	DESCRIPTION	
SYS3-023N-0001-E	CMOSS/SOSA Starter Kit includes: <ul style="list-style-type: none"> > (1) VPX-1260 SBC > (1) VPX3-687 Switch > (1) VPX3-673 PNT card > (1) VPX PSU > (1) VPX chassis 	
CBL-032N-0001	Cable set for interfacing to CMOSS/SOSA Starter Kit. Cables mate to front panel connectors and break out to commercial-style connectors. Set includes cables: <ul style="list-style-type: none"> > J1 (28VDC Input Power) > J3 (10GbE Switch Fiber Optics) > J4 (PNT Coax I/O) > J5 (SBC I/O) > J6 (PNT Module I/O) > J7 (Switch I/O) 	