

# SOSA™ VPX POWER VITA 62 & VITA 46.11

Subset of VITA 62 Proposed for SOSA™

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# 3U VPX Power 500W+



Inputs: 28VDC or 48VDC or 270VDC or AC single or 3 phase

Outputs: 12VDC @ up to 40A

5VDC @ up to 40A

3.3VDC @ up to 20A+

3.3VDC AUX @ up to 6A

+/-12VDC AUX @ up to 1.5A

Power Max: 735.8W          Dissipation: Up to 100W

# 6U VPX Power 1000W+



Inputs: 28VDC or 48VDC or 270VDC or AC single or 3 phase

Outputs: 12VDC @ up to 80A

5VDC @ up to 80A

3.3VDC AUX @ up to 40A

+/-12VDC AUX @ up to 1.5A

Power Max: 1528W          Dissipation: up to 200W

# 3U VPX SOSA™ Power 700W+



Inputs: 28VDC or 48VDC or 270VDC or AC single or 3 phase

Outputs: 12VDC @ up to 80A

5VDC @ up to 40A

3.3VDC @ up to 20A+

3.3VDC AUX @ up to 20A+

+/-12VDC AUX @ up to 1.5A

Power Max: 735.8W 1026W Limited by input pins @ 28V

Dissipation: Up to 140W

# 6U VPX SOSA™ Power 1000W+



Inputs: 28VDC or 48VDC or 270VDC or AC single or 3 phase

Outputs: 12VDC @ up to 80A 160A

5VDC @ up to 80A

3.3VDC AUX @ up to 40A

+/-12VDC AUX @ up to 1.5A

Power Max: 1528W 2052W Limited by input pins @28VDC

Dissipation: Up to 280W

# Future Improvements and Limits

- 3U Power to approach 1000W

Limited by low line input current 40A-50A @ 28VDC

Chassis cooling limits

Output mostly 12V (12V Centric) for maximum power

- 6U Power to approach 1800W

Connector current rating on output pins - 160A

Chassis cooling limits

# Cooling Challenges

Module Description	3U Heat Load Limit*	6U Heat Load Limit*	System Integration impact
48.2 conduction to air	up to 50W	up to 65W	non-proprietary and vehicle agnostic
48.8 Air Flow Through	50W to 100W	65W to 200W	
48.2 conduction to liquid	50W to 100W	65W to 200W	Drives additional vehicle cooling infrastructure
48.4 Liquid Flow Through	Not applicable	above 200W	

Chart courtesy of David Vos; Lockheed

Potential power supply dissipation

3U 100W to 140W

6U 200W to 280W



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# System Management

## VITA 46.11

### Today

- no consistent standard
- IPMI and other I<sup>2</sup>C formats offered
- No standard definition of sensors

### Future

- Standard Format
- Defined commands
- Defined data structure
- Specify mandatory data
- Specify optional data



# SOSA™ POWER SUPPLY SYSTEM MANAGEMENT

## Goals

- Create a common way of defining a SOSA™ PSM IPMC interface to ensure interoperability between multiple vendors.
- Create a set of rules defining the minimum requirements for a SOSA PSM IPMC.
- Identify use cases for the Data and how that data might be used in both lab/development, production and system operation settings

# Intelligent PSU Reporting

- Reporting
  - Input Voltage
  - Input Current
  - Output Voltage
  - Output Current
  - Temperature
- Inventory Information
  - MFR
  - Part Number
  - Serial Number
  - Revision
- Fault Logging
- Time Totalizing Counter
- Output Voltage Turn-On/Off Sequencing
- Fault Detection Threshold Configuration
- SYSRESET\* Generation Settings
  - Generation On/Off
  - Detection Levels
- Energy Storage Element Control/Reporting

# VITA & SOSA™ Updates

- Adding 12V Centric 3U configuration
- Revising Keying
- Defining system management capability and commands – VITA46.11 update
- Clarifying and correcting various electrical and mechanical issues and connector choices
- Incorporating editorial comments

# VITA

## Related Specifications

- VITA 46.0 Keying Updates
- VITA 62.1 - 3Ø 3U Front End Card  
In progress
- VITA 62.2 – 270VDC Input Applications 3U and 6U  
In progress

# Questions?

Thank You



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