



# VPX370, 3U VPX Development System

## 7-slot system with integrated Single Board Computer

The Abaco Systems VPX370 is the 2nd generation 3U VPX platform for high-speed data acquisition, signal processing, and computing applications. Developed specifically for aerospace and defense applications. The VPX modular architecture enables user to add high performance VPX FPGA and I/O capability in a small form factor. All Abaco Systems 3U VPX FPGA and I/O boards that are usable in the VPX370 can be configured for rugged conduction cooled form factors. This makes the VPX370 an ideal platform for developing IP and technology with an easy migration path to rugged configurations, by retaining common technology elements.

The VPX370 includes a system controller, a 7-slot VPX backplane, and PCIe data switch. Slot 1 is dedicated to a Single Board Computer (SBC) leveraging an Intel quad

core i7 processor, 16GB of DDR3 SDRAM, a 1 Gigabit Ethernet interface and a single DVI/HDMI interface via mini HDMI port. Slots 2 through 6 are available for any VITA 65 OpenVPX Compliant 3U VPX card such as Abaco's FPGA, GPGPU, and SoC boards. Slot 7 is dedicated to a system PCIe switch enabling inter-slot communication between any card in the system. The system PCIe switch is built with PCIe Gen2 (PCIe Gen3 optional) technology including 24 PCIe lanes spread across six ports. The VPX370 backplane design architecture is optimized for adjacent slot communication up to 2 GBytes/s (with optional PCIe Gen3) balancing flexibility and performance (see block diagram for more details). Contact [4DSPsales@abaco.com](mailto:4DSPsales@abaco.com) for more product details and assistance in selecting the best cards for your requirements.

### FEATURES:

#### System

- 3U OpenVPX™ Modular System
- Adjacent inter-slot communication bandwidth: up to 2 GB/s with optional PCIe Gen3
- 0.8", 0.85" or 1.0" module pitch compatible
- Five OpenVPX™ expansion slots
- Rear Transition Module (RTM) support
- Air-cooled bottom-top airflow
- Dual 300W power supplies (600W aggregate per system), 3U plug-in modules.
- 3U VPX 24-lanes PCIe Gen2 switch (PCIe Gen3 optional).
- Supports Abaco 3U VPX FPGA and SoC boards.
- Supports multi-channel A/D and D/A using FMCs
- Rackmount version available (VPX371)

Electrical Specifications	
Input Voltage	90-264 VAC
PSU DC Output Characteristics (values for each PSU individually)	300 Watts 5V@25A 3.3V@35A 12V@3A -12V@0.5A
Power Consumption	47W (typ) 76W (max)
Power Consumption (w/ optional PCIe Switch)	61W (typ) 92W (max)

Environmental Specifications	
Operating Temperature	0°C to +55°C
Storage Temperature	-40°C to +70°C
Airflow	400 LFM
Relative Humidity	5% to 95%
Operating Vibration	5Hz to 1000Hz PSD = 0.002g <sup>2</sup> /Hz
Operating shock	20g, 11 milliseconds, half-sine
Operating Altitude	0 ft to 15,000 ft (with airflow)
Conformal Coating	None

Mechanical Specifications	
Size	4U x 67HP x 290mm
Dimensions	13.4" (width) 11.5" (depth no handles) 13.2" (depth with handles) 7" (height)
Weight	12 lbs (approximately)

# VPX370, 3U VPX Development System 7-slot system with integrated Single Board Computer

## Specifications

### Single Board Computer-System controller

- 4th Gen Intel Quad Core i7 CPU
- Supports Windows®, Linux® or VxWorks®
- 16GB DDR3L-1600 ECC DRAM
- 250 GB SATA 6 Gb/s SSD
- 10/100/1000 Mbps Ethernet, dual USB2.0, DVI/HDMI, additional SATA, dual RS232, 2x GPIO available internally

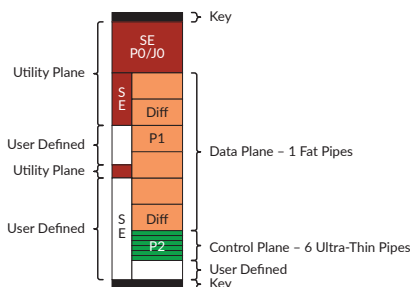
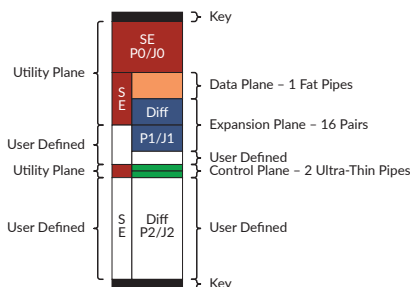
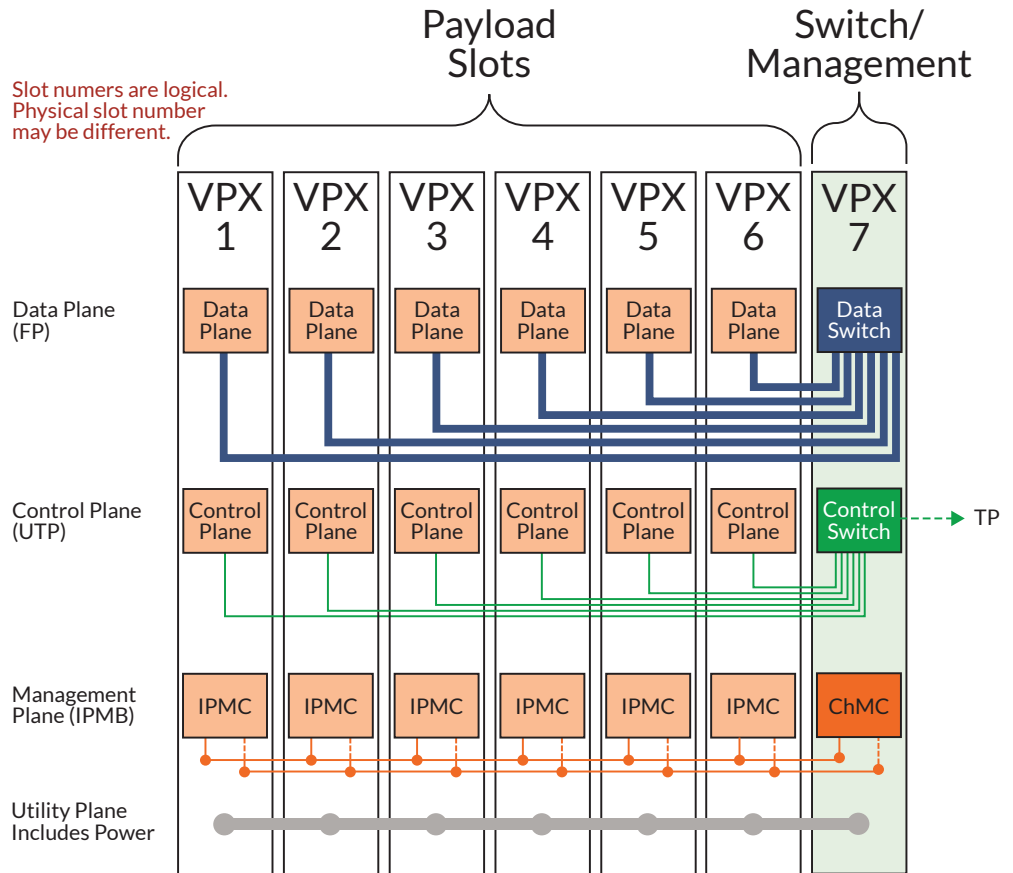
### Backplane

- BKP3-CEN07-15.2.3-3, 7-slot 3U VITA 65 OpenVPX™
- 6-payload slots, 1 switch/ management slot
- Data Plane (FP) in a star configuration via a data switch in Slot 7
- Control Plane (UTP) in a star configuration via a control switch in Slot 7
- Built in ESD ground protection in every slot
- Other backplane configurations available for custom system designs

### AS9100 Certified

## Block diagram

Slot numbers are logical.  
Physical slot number may be different.



## Ordering information

Talk to us about your algorithmic requirements, Abaco Systems is a full-service firmware and software development house. We are a specialist at high performance FFT and Video Processing. Check with us, we may have IP Cores that meet requirements for your application, right off the shelf.



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