ROYAL ALBATROSS PLUS VME120-WSIO
Dual-Slot, Workstation I/O Mezzanine Companion Board to VME120

Intel® Quad Core
Xeon® E3
Up to 3.0 GHz

Up to
64 GB
DDR4 DRAM w/ECC

Up to three
PMC
2x XMC or 1x MXM

Operating Temperature Range
-20 to +75°C

SYSTEM HIGHLIGHTS (SBC + WSIO)
- 3.0 GHz Intel® Xeon® E3 (Kaby Lake, 7th Gen Core™) (E3-15xxM V6)
- Up to 64 GB of DDR4 memory with ECC
- Three-head Intel® HD Graphics P630 with GT2
- Support for DirectX 11/12, OpenGL 4.3/4.4, ES 2.0, and OCL 2.x
- Optional mSATA SSD for OS boot
- One PCI-X/16-Lane XMC site with rear I/O or 2.5” SATA drive
- One USB 3.0 and two USB 2.0 ports to front
- Four USB 2.0 to rear on P2
- Tundra® Universe II™ VME bridge chip
- Two 10 Gigabit Ethernet ports with TCP/IP Offloading Engine
- Intel® Virtualization Technology (VT-x/VT-d)
- Trusted Execution Technology (TXT)

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SYSTEM OVERVIEW (SBC + WSIO)
Mated to the Royal Albatross VME120 SBC basecard, the VME120-WSIO “Royal Albatross Plus” is a ninth-generation 6U VME SBC assembly based on GMS’s upgradable CPU “computing engine” technology. It is designed to provide the highest level of workstation performance and expansion I/O possible in a ruggedized, dual-slot VME assembly. It may be operated in all VME 0.8 pitch backplanes in VME64 or VME64x form factors with 3-row or 5-row connectors or an optional P0 interconnect. The Royal Albatross is the highest performance VME SBC in the market with vast I/O options and upgradable CPU for extended life cycles.

When the Workstation I/O (WSIO) mezzanine is added to the SBC, the two-slot assembly adds up to 3x PMC, 2x XMC, and 1x MXM.

Royal Albatross is equipped with the latest, most power-efficient Intel® Kaby Lake-H workstation processor with Hyper-Threading for a total of up to four physical cores (eight logical cores) operating up to 3.0 GHz and using Intel’s Turbo Boost 2.0 up to 4.0 GHz. The CPU is coupled with up to 64 GB of DDR4 RAM organized in two banks with ECC support. These Kaby Lake Xeon® E3 cores coupled with Royal Albatross Plus’s I/O can be used to create multiple virtual machines (VMs) replacing up to 8 separate single-processor systems.

APPLICATIONS
Royal Albatross is designed to provide the ultimate and first-of-its-kind micro-server class VME SBC replacement of multiple legacy VME SBCs (x86 or PowerPC™) with a single SBC utilizing Intel’s Virtualization Technology (VT-x/VT-d2). Furthermore, with the Trusted Execution Technology (TXT), the SBC is secure from unauthorized boot devices and unauthorized replications of the system.

The VME120-WSIO is ideal for data centers, factory automation, medical, and defense applications, where big investments have been made on a VME platform and where true hard “Real Time” is required. No other bus architecture can provide this hard “Real Time” performance like VME. The Royal Albatross may be ordered from the factory with operating systems such as Windows®, Linux®, or RTOS pre-installed.
**ENVIRONMENTAL SPECS**

**SWG-E:** Greatest computing density in one 6U VME card

**Size:** 6U, dual slot at 0.8-in pitch

**Weight:** 3 lbs.

**Power:** As low as 60 W

**MIL-STD:** MIL-STD-810G, MIL-S-901D, MIL-STD-461F and DO-160D

**Temperature:** Operates up to extended temp -20°C to +75°C (Optional)

**Ruggedness:** Available in ruggedization levels R1-R3

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**I/O AND EXPANSION OPTIONS (WITH SBC)**

- Two front panel 10 Gigabit Ethernet ports
- Two rear Gigabit Ethernet ports
- Four buffered SATA ports with Intel® RSTe RAID support
- Line-In, Headphone-Out, and Mic-In
- Four Serial Ports with RS-232/422/485 options on P2
- One DVI or one VGA video line to front panel
- Super I/O plus COM port to front panel
- Sixteen buffered GPIO lines with interrupt capabilities on P2
- Workstation I/O (WSIO) for additional custom I/O
- 32 MB of BIOS Flash for system parameters and user data
- VME64 or VME64x support via Tundra® Universe II™
- 3-Row or 5-Row interconnect options
- Compliant with ANSI VITA-1.1, VITA 31.1, VITA 39, and VITA 42
- Single +5V operation

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**I/O AND EXPANSION OPTIONS (WSIO MEZZANINE)**

- Three expansion sites for PMC/XMC/MXM:
  - One MXM site for GPU with dual VGA (optional sync-on-green)
  - One PMC 133 MHz 64-bit and two PMC 100 MHz 64-bit sites
  - Two XMC x8 PCIe sites
  - One Audio out 3 W amplifier
  - 3-Row or 5-Row interconnect options
  - Optional P0 I/O