

The Osprey is a rugged small form factor, commercial off the shelf (COTS) embedded computer based on 3U VPX (also known as VITA 46), the next generation of ruggedized compact embedded systems. The system enclosure is designed to receive boards in the size of VPX 3U format and interface with its associated specific backplane and work in an airborne environment. The boards are cooled entirely by conduction through the chassis walls of the computer. Cooled air is not allowed to pass directly over the boards to completely protect them from airborne contaminants.

Osprey 3U VPX System consists of the following:

- 3U 5-Slot VPX backplane designed as per ANSI-VITA-46 standards.
- VITA-62 120W (Usable Power) DC-DC 3U Pluggable Power Supply Unit
- 120W Front end filter with reverse polarity protection and transient protection.
- Circular I/O Interface board
- Battery to preserve the CMOS Contents of the VPX Boards.
- Conduction Cooled
- Mounting: Hard Mount

FEATURES

CPU: Intel® Xeon® processor D-1500 Family: 8-core or 12-core processing.

Memory: 32 G bytes of DDR4 DRAM

Storage: On-board solid -state drive (SSD)

option: Flash Drive Module: 2.5 Inch SATA300 SSD

Connectors: Circular Mil Connectors

GPU Module: Graphics Processor: AMD Radeon E8860

Interface: XMC Form Factor, 8 Lane PCIe Interface

Graphics Memory: 2GB GDDR5 Memory

GPU I/O: 2 X SDI Input/ Output, 1 x VGA, 1 x Display Port

SBC I/O: 1x USB2.0 and USB3.0, 3x RS232, 4x GPIO
2 x 1Gb-ETH, 2 x 10Gb_ETH (Built Option)

Expansion: mPCIe1, mPCIe2, and mPCIe3 Field I/O's

Dimensions: 194 (H) X 124 (200) W X 238 (D) all in mm

Operating Temperature: -40°C to +71°C

Storage Temperature: -40°C to +85°C

Weight: < 8 Kg

Material: Aluminium

Mil Standards: MIL-STD-810F, MIL-STD-461F, MIL-STD-704F/1275D

Operating System: LINUX, Windows



Design Specifications

Mechanical



- **Surface finish:** Black PU paint (Powder Coated)
- Heat Load is equally distributed across the 6 slots
- **Amb:** 71°C, 1m/s air flow
- **Height:** 194mm
- **Width:** 124mm Mounting, 200mm with Fins
- **Depth:** 238mm

Expansion: The fourth slot of Osprey chassis is for mPCIe I/O board. The 3U VPX carrier for mPCIe I/O mezzanine board modules provides a modular approach to system assembly since each carrier can be populated with any combination of analog input / output, digital input/output, communication modules. The modularity allows the user to create a board which is customized to the application. This saves money and space as a single carrier board populated with I/O modules may replace several dedicated function VPX boards. The carrier board provides impressive functionality at low cost.

Power Supply Solution

Power Supply - The VITA-62 DC-DC 3U Pluggable Power supply unit is designed to support VPX Chassis with usable output power of 120W.

DC_DC Converters are used to convert variable 18-36VDC DC I/P to fixed +5V @18A, +3.3VDC @20A, +12VDC@8A. These O/P's are isolated from I/P.

Aux. DC-DC Converter takes DC I/P 18VDC to 36VDC & gives +12VDC_A@2A, -12VDC_A@1A, & +3.3VDC@5A. These Auxiliary voltages are used as the input voltages for the all control circuits on the Power Supply.

Environmental Specifications

- **Operating Temp:** -40°C to +71°C
- **Storage Temp:** -40°C to +85°C
- **Relative Humidity:** 5% to 95 % non-condensing
- **Power(GND):** 18VDC-36VDC, MIL-STD-1275D (optional)
- **Power (Airborne):** 18VDC-36VDC, MIL-STD-704E (optional) 50 m Sec. Hold Up (Optional)
- **Shock:** 40g peak-peak @ 11msec
- **Vibration (Ground & Airborne):** 20-2000, 0.1g2/hz
- **EMI:** MIL461F
- **Ingress Protection:** IP67

Connectors

- **J0 10 Pin LEMO Circular Connector:** +18V to +36VDC (Nom: +28VDC) Power Input Connector
- **J1 114 Pin LEMO Circular Connector:** 1 x USB2.0, 1x USB3.0, 3 x RS232, 2 x 1Gb-ETH, 1 x VGA, 4x GPIO, mPCIe1 Field I/O's (Built Option)
- **J2 114 Pin LEMO Circular Connector:** Display Port, mPCIe3 Field I/O's (Built Option), mPCIe3 Field I/O's
- **J3 40 Pin LEMO Circular Connector:** Display Port (Built Option)
- **J4 Single Mode Cable with Duplex LC Connector with Dust Cap:** 2 x 10Gb-ETH (Built Option)