

Osprey Hardware Overview

This document provides a brief description of the Osprey PDP-11 emulator hardware. The Osprey is a FPGA-based co-processor card available in ISA and PCI form factors that emulates the CPU and memory of legacy Digital Equipment Corporation PDP-11 computer systems. The Osprey is designed and manufactured by Strobe Data, Inc. It is sold and installed by Migration Specialties.

The Osprey is hosted within a Windows-based server. The card works in conjunction with software components that allow legacy PDP compatible physical devices such as disk drives, tape drives, serial cards, and other common I/O devices to be virtualized. The Osprey also provides the means to connect to a physical UNIBUS or QBUS, allowing it to interface with more exotic PDP compatible I/O cards.

OSPREY CARD

The Osprey Co-Processor is available in ISA and PCI formats. The PCI card is depicted here. It is available in four speeds, SX, DX, TX, and QX. The Osprey/SX is equivalent in speed to a PDP-11/94. The Osprey/QX is four times faster.



Osprey Tech Specs

Osprey Co-Processor executing PDP-11 instruction set. Occupies one ISA or PCI slot. A writeable control store, FPGA implementation of the PDP-11 architecture with 4 MBytes of tightly coupled, zero wait-state memory. Includes FPJ11 compatible hardware floating point. UNIBUS or QBUS support logic for non-emulated devices is provided on-board with connector to wide bandwidth adapter. Windows compatible software support environment included. FCC/CE certified.

OSPREY LEGACY INTERFACE CARD

The Osprey can interface with a legacy UNIBUS or QBUS via the Legacy Interface Card (LIC). The LIC depicted here utilized a Firewire connection to the Osprey Co-processor card. The ISA-based Osprey utilizes ribbon cable connections between the Co-processor and LIC.



LIC Tech Specs

Dual-height QBUS PIC or quad-height UNIBUS LIC card plugs into PDP-11 backplane. Interface cable plugs into logic connector on Osprey. I/O adapter logic provides programmed I/O and DMA access to legacy controllers. 32 MB/sec transmission meets most ultra high bandwidth application requirements. FCC certifiable.

OSPREY RACK MOUNT CHASSIS

The Osprey chassis provides the means to house the Osprey emulator, the Windows host server, and legacy I/O cards in a single rack mount chassis. The chassis provides new power supplies and cooling fans so support legacy I/O cards. QBUS chassis' can house up to four quad-height QBUS I/O cards. UNIBUS chassis' are available in four (depicted) and nine slot configurations.



Chassis Tech Specs

19" wide by 20" deep (483 x 508 mm), height varies based on configuration. This chassis is FCC certifiable. A 100-120/200-240 VAC, 47-63Hz system power supply delivers +5@60, +12@13, +15@5, -5@0.5, -12@1, and -15 VDC@Amps. Cooling fans and space are included for hex-height, 4-slot or 9-slot DD-11 UNIBUS backplane, or 4-slot QBUS backplane. ATX PC motherboard, diskette and hard drives (one hidden and four visible half-height bays).

PC Subsystem

At a minimum, the PC subsystem will contain the following components:

- ATX Motherboard
- 2Ghz CPU
- 1 GB Memory
- Onboard Video
- 80GB Disk Drive
- DVD-ROM
- 17" LCD monitor
- Keyboard
- Mouse
- Windows XP Pro