Octavio-HLV™

800MHz Vortex86 CPU with Embedded Application Server

Key Features

- ♦ Smallest embedded server with integrated data acquisition

- ♦ Based on 800MHz Vortex86DX CPU

- ♦ 256MB soldered-on DRAM

- ♦ Standard I/O interfaces:
  - four USB 2.0 ports
  - two RS-232/422/485 and two RS-232 serial ports
  - 10/100Mbps Ethernet
  - VGA CRT display
  - PS/2 keyboard/mouse ports
  - 16 digital I/O lines

- ♦ Optional data acquisition circuitry provides:
  - multiplexed 16-channel 16-bit A/D with autocalibration
  - four 12-bit D/A outputs
  - 24 digital I/O lines
  - two counter/timers

- ♦ Optional integrated DC/DC power supply module

- ♦ Bootable Linux 2.6 image pre-loaded on flashdisk

- ♦ Compact standalone or wall-mount enclosure with optional DIN rail adapter

- ♦ -40°C to +85°C fanless operation

Embedded Application Server

Octavio-HLV is a configurable system ready to power on and run straight out of the box. The system integrates Diamond's field-proven Helios single board computer and its industry-leading, high-accuracy data acquisition circuitry with the popular Pandora enclosure.

Flexibility of Configuration

Octavio-HLV systems can be configured to meet the needs of your application. You may choose from various Helios SBC models, flashdisk sizes, power supply options and case heights. Fully customized versions of Octavio-HLV can also be configured

Rugged Design

Octavio-HLV is highly resistant to shock and vibration. From a -40°C to +85°C operating temperature to its 256MB of soldered SDRAM and cable-free packaging, Octavio-HLV thrives in the most extreme environments.

System Software Included

Octavio-HLV comes pre-loaded with a bootable Linux operating system that is fully configured with all of the system I/O. It also includes Diamond's Universal Driver software, which provides C programming support for the system's integrated data acquisition circuitry.

Data Acquisition Features

When ordered with its optional data acquisition (DAQ) subsystem, Octavio-HLV provides 16 16-bit A/D inputs with 250KHz sample rate, four 12-bit D/A outputs, 40 digital I/O lines, and two counter/timers. Multi-range autocalibration on both A/D and D/A ensures maximum accuracy over time and temperature.

Enclosure Features

Octavio-HLV's enclosure was designed to eliminate most internal cables, resulting in enhanced ruggedness and reliability in both fixed and mobile environments. All of the system's standard interfaces are accessible on the front of the enclosure via industry standard connectors, which are mounted on a panel I/O board. The panel I/O board also accommodates I/O from selected PC/104 add-on modules. The system is highly shock and vibration-tolerant, and features fanless operation over a temperature range of -40°C to +85°C.

OCTAVIO-HLV: Embedded Application Server

DIAMOND SYSTEMS

SYSTEM SPECIFICATIONS

Processor	Vortex86DX CPU at 800MHz
Memory	256MB DRAM soldered on board
Operating system	Linux 2.6.23
System software	Universal Driver 6.02
Display type	VGA CRT
Display resolution	1280 x 1024 maximum
USB ports	4 USB 2.0
Serial ports	2 RS-232 2 RS-232/422/485
Networking	10/100Base-T Ethernet
Mass storage	Integrated 128MB or 1GB flashdisk
Keyboard/Mouse	PS/2
Input power	5V ±5%
Power consumption	5.4W (base system)
Operating temperature	-40°C to +85°C (-40°F to +185°F)
Dimensions (L x W x H)	5.5 x 5.75 x 1.7 in. (138 x 145 x 43 mm) Height varies by selected enclosure
Weight	30oz / 863g
RoHS	Compliant

ORDERING INFORMATION

OCTAVIO-P-F-D-S-R	Octavio-HLV Embedded Application Server (Please select from the options below)
P = H8A **H8D**	Helios SBC, 800MHz Vortex86DX, DAQ Helios SBC, 800MHz Vortex86DX, no DAQ
F = HL128 **HL1G**	128MB flashdisk with Linux pre-loaded 1GB flashdisk with Linux pre-loaded
D = 00 **LP** **J5**	No integrated power supply 25W integrated DC/DC power supply 50W integrated DC/DCpower supply
S = 17 **30** **50** **70**	1.7 inch enclosure height 3 inch enclosure height 5 inch enclosure height 7 inch enclosure height
R = 00 **DR**	No DIN rail adapter Add DIN rail adapter

DATA ACQUISITION SPECIFICATIONS

ANALOG

Number of Inputs	16 single-ended or 8 differential, user selected
A/D resolution	16 bits
Input ranges	±10V, ±5V, ±2.5V, ±1.25V, 0-10V, 0-5V, 0-2.5V programmable
Max sample rate	250KHz
Protection	±35V on any analog input without damage
Nonlinearity	±3LSB, no missing codes
On-board FIFO	2048 samples, programmable threshold
A/D, D/A calibration	Autocalibration with software support
Number of outputs	4, 12-bit resolution
Output ranges	±5V, ±10V, 0-5V, 0-10V
Output current	±5mA max per channel
Settling time	10µS max to 0.012%
Relative accuracy	± 2 LSB
Nonlinearity	±2 LSB, monotonic
Reset	Reset to zero-scale or mid-scale (jumper selectable)

DIGITAL

Number of I/O lines	Model H8A: 40 lines Model H8D: 16 lines
Input voltage	Logic 0: -0.5V min, 0.8V max Logic 1: 2.0Vmin, 5.5V max
Input current	±3µA max
Output voltage	Logic 0: 0.0V min, 0.4V max Logic 1: 2.4V min, 3.3V max
Output current	Logic 0: 12mA max per line Logic 1: -8mA max per line

COUNTER/TIMERS

A/D Pacer clock	24-bit down counter
Clock source	10MHz on-board clock or external signal
General purpose	16-bit down counter

All trademarks and logos are the property of their respective owners.