

OCTAVIO-HLV SYSTEMS



COMPACT, RUGGED, LOW-POWER EMBEDDED APPLICATION SERVERS



- Based on low power, mid-performance PC/104 SBC
- Fully featured, including support for four USB 2.0 ports, four serial ports, 10/100Base-T Ethernet, IDE hard drive, flashdisk, and VGA CRT display
- Integrated data acquisition featuring 16-bit A/D with autocalibration, 12-bit D/A, DIO, and counter/timers
- Extremely rugged, with soldered DRAM and fanless -40°C to +85°C operating temperature
- Compact standalone or wall mount enclosure

DESCRIPTION

Octavio-HLV embedded application servers are compact, rugged systems aimed at a wide variety of data acquisition and control applications. The systems are based Diamond's field-proven Helios PC/104 single board computer, which combines an 800MHz Vortex86DX CPU and integrated peripheral interface functions along with Diamond's industry-leading high-accuracy data acquisition circuitry.

Octavio-HLV comes with 256MB of soldered DRAM for increased resistance to shock and vibration. It also has a 128MB or 1GB solid state IDE flashdisk pre-loaded with Linux 2.6.23 and Diamond's Universal Driver data acquisition programming software, leaving ample room for your application on the flashdisk.

Standard system I/O includes VGA graphics, a 10/100Base-T Ethernet interface, four USB 2.0 ports, two RS-232 serial ports, two RS-232/422/485 ports, and PS/2 keyboard and mouse interfaces.

DATA ACQUISITION SUBSYSTEM

When ordered with its optional data acquisition (DAQ) subsystem, Octavio-HLV provides 16 16-bit A/D inputs with 100KHz sample rate, 4 12-bit D/A outputs, 40 digital I/O lines, and 2 counter/timers. Multi-range autocalibration on both A/D and D/A ensures maximum accuracy over time and temperature.

SYSTEM SPECIFICATIONS

Processor	800MHz Vortex86DX CPU
Memory	256MB soldered DRAM
Operating System	Linux 2.6.23
System Software	Universal Driver 6.02
Display Type	VGA monitor
CRT 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 IDE flashdisk
Keyboard / Mouse	PS/2
Input Power	5VDC ±5%
Power Consumption	5W
Operating Temp	-40°C to +85°C
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	30.4 oz / 863.4g
RoHS	Compliant

ENCLOSURE

Octavio-ATHM'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 board also accommodates I/O from selected PC/104 add-on modules. The system is highly shock and vibration tolerant, and can operate fan-less over -40°C to +85°C.

CUSTOMIZATION

Custom versions of Octavio-HLV are also available. Contact your Diamond Systems Sales Representative for a custom quote.

Customization options include:

- Add integrated 80GB hard disk drive
- Integrate any of Diamond's PC/104 I/O modules (height of enclosure may change)
- Windows CE instead of Linux OS pre-loaded

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
OCTAVIO-P-F-D-S-R	Octavio-HLV Embedded Application Server {Please select from the options below}
P = H8A	Helios SBC with 800MHz CPU and DAQ
H8D	Helios SBC with 800MHz CPU, no DAQ
F = HL128	128MB flashdisk with Linux pre-loaded
HL1G	1GB flashdisk with Linux pre-loaded
D = 00	No integrated DC/DC power supply
LP	25 Watt integrated DC/DC power supply
J5	50 Watt integrated DC/DC power supply {Options LP or J5 require S=30 or greater}
S = 17	1.7 inch enclosure height
30	3 inch enclosure height
50	5 inch enclosure height
70	7 inch enclosure height
R = 00	No DIN rail adapter
DR	Add DIN rail adapter

DATA ACQUISITION SPECIFICATIONS

ANALOG INPUTS	
Number of Inputs	16 single-ended or 8 differential, user selectable
A/D Resolution	16 bits
Input Ranges	±10V, ±5V, ±2.5V, ±1.25V, 0-10V, 0-5V, 0-2.5V programmable
Max Sample Rate	100KHz
Protection	±35V on any analog input without damage
Nonlinearity	±3LSB, no missing codes
On-board FIFO	2048 samples, programmable threshold
A/D and D/A Calibration	Autocalibration with software support
ANALOG OUTPUTS	
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 I/O	
Number of I/O Lines	40 lines
Input Voltage	Logic 0: -0.5V min, 0.8V max Logic 1: 2.0V min, 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