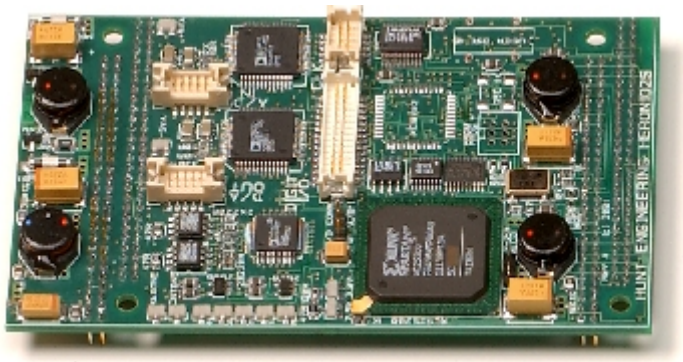
HUNT ENGINEERING
Chestnut Court, Burton Row,
Brent Knoll, Somerset, TA9 4BP, UK
Tel: (+44) (0)1278 760188,
Fax: (+44) (0)1278 760199,
Email: sales@hunteng.co.uk
http://www.hunteng.co.uk
http://www.hunt-dsp.com

‘one of the many tools we have to help us build your system solution’



HERON-IO2 FPGA module with 2 channels of 12bit 125Mhz A/D and 2 channels of 14bit 125Mhz D/A

- **HERON-IO2V has Xilinx Virtex II FPGA with 1M gates**
- **FPGA configuration downloaded using the HERON Serial Bus.**
- **Choice of clocking options**
- **Two 125MSPS 12 bit A/Ds connected to the FPGA**
- **Two 125MSPS 14 bit D/As connected to the FPGA**
- **High analog signal bandwidth of 500Mhz in and 145Mhz out.**
- **8 uncommitted digital I/Os**
- **Several serial I/O options possible -- configured by the FPGA.**
- **Connects to all of the HERON FIFOs, UMI and module ID signals**

“Find your system solution at www.hunteng.co.uk”

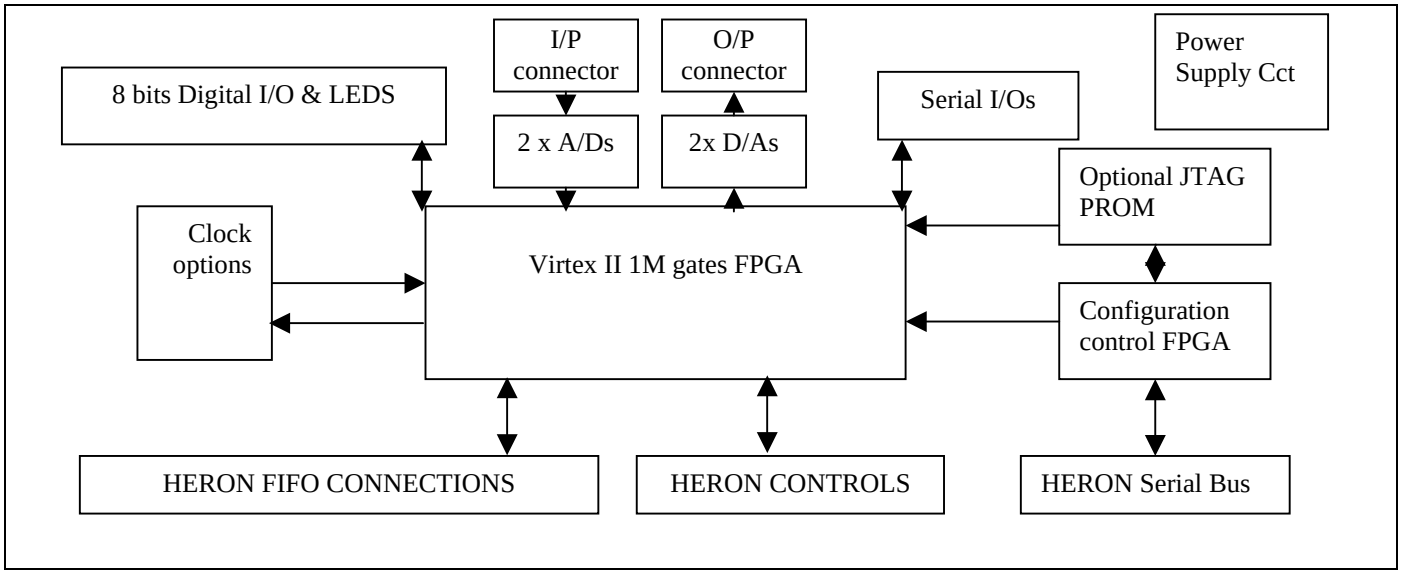
The HERON-IO2 provides a user programmable FPGA along with fast Analog Inputs and outputs for a HERON system. The FPGA controls the sampling of the A/Ds and D/As. The incoming digitised data is then fed to the FPGA where it can be processed, buffered or simply written to a HERON FIFO for use in the rest of the system. The outgoing digitised data is then fed from the FPGA where it can be processed, buffered or simply read from a HERON FIFO.

Using the HERON serial bus allows the FPGA to be configured with a standard module configuration, or a custom one provided by the user or HUNT ENGINEERING. After configuration the module can accept user messages over the HERON serial bus, allowing registers etc to be programmed. If a more significant programming change is required a complete new FPGA configuration can be downloaded. The FLASH based configuration PROM that can load the configuration data into the FPGA when it is used in an embedded system This PROM can be programmed using the standard JTAG cable available from Xilinx (such as Xilinx Parallel cable 3 or 4).

The Digital I/O has a number of voltage formats such as LVTTL or LVCMOS defined by the combination of a jumper setting and the configuration downloaded to the FPGA. In addition it is possible for the HERON-IO2 to provide a choice of RS232, RS485 and Differential ECL serial interfaces.

The HERON-IO2 can access HERON-FIFOs at a rate of 32 bits per FIFO clock in AND 32 bits per FIFO clock out concurrently. For example with a FIFO clock of 100Mhz this is 400Mbytes/sec in AND 400Mbytes/sec out.

The use of a Virtex II XC2V1000fg456-4 part allows clock rates of up to 365Mhz, and also provides hard coded multipliers and extended I/O formats such as Low Voltage Differential Signalling (LVDS)
NOTE VIRTEX II I/Os are not 5v tolerant!



Technical Specification

Processor:
Virtex II

Memory:
None external to FPGA

Host Bus:
HERON

Maximum Dimensions:
4.0 inches x 2.5inches x 6.5mm high.

Power requirements:
5V dependent on FPGA configuration
12V Max: 500 mA
Typ: 300 mA
-12V Max:0A
Typ:0A

FPGA Power Consumption/Dissipation
Max Bare FPGA package dissipation: 2.4W

From 5V supply :
FPGA PSU power can source 7.2W for Virtex II
Rest of logic uses 0.6W

Clocking Speed:
A/Ds 1Mhz to 125Mhz
D/As 0hz to 125Mhz
FPGA Max Virtex II 365Mhz

I/O bandwidth:
e.g. HEPC9 400Mb/s in + 400Mb/s out

Analog I/P specifications

Channels
2 in with common or independent clocking set by jumper
Standard Input characteristics:
A/C coupled 200R, signal B/W from 750Hz to 500Mhz
Zero input noise typically 3 levels maximum 8 levels
Offset typically +-3 levels maximum +-12 levels
Optional Input types:
A/C
A/C coupled as standard, but choose I/P impedance from 50R to 1K
D/C
D/C coupled choose I/P impedance from 50R to 1K, Signal B/W 0hz to 500Mhz but each input must not exceed the range 0v to +5V (of this module). This means a 4V DC offset is required.
Zero input noise typically 3 levels maximum 8 levels
Offset typically +-8 levels maximum +-16 levels

Analog O/P specifications

Channels
2 with independent clocking
Standard Output characteristics:
A/C coupled 10R, signal B/W from 1250Hz to 145Mhz
Optional Output types:
D/C – 10R, signal B/W 0 – 145Mhz

Ordering Information

HERON-IO2V

Distributor details: