

Single DIME Module

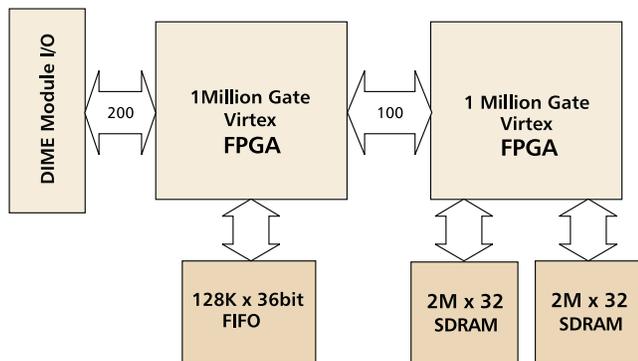
Delivers 2.2 Million Programmable Gates and Growing

by Allan Cantle, Managing & Technical Director, Nallatech Ltd.,
a.cantle@nallatech.com

Ten years ago, who would of thought that at the turn of the century we could squeeze over 2.2 Million programmable logic gates, 16-Mbytes of memory, and a 4-Mbit FIFO into a few square inches?

It is now possible to implement significant DSP algorithms into a single “DIME” module and have them running faster than you ever imagined. For example, at Nallatech Ltd. we are currently implementing a 13 x 13 Convolution function with 16-bit wide coefficients and data paths on this module, so you don’t need to concern yourself with the problems of multiple power supplies and complex BGA packaging. You can instantly utilize two of the largest FPGAs in the world on this one module and all you need are your current FPGA development tools.

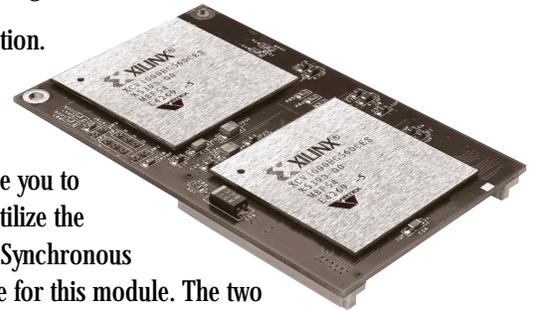
Module Architecture



Nallatech’s range of DIME motherboards and modules enable you to rapidly develop custom applications without the need to design and manufacture custom PCB’s.

This DIME module has been designed to conquer those complex two dimensional image processing problems that have been the mainstay of the DSP microprocessor technologies and dedicated ASICs to date. Examples of image processing functions that this module can easily perform in real time include:

- 2D Convolution/Correlation.
- Image Pattern Recognition.
- Graphics Generation.
- 2D Morphology.



Example VHDL functions that enable you to quickly and easily utilize the onboard FIFOs and Synchronous DRAMs are available for this module. The two independent SDRAMs allow you to implement a versatile arrangement of data analysis and manipulation techniques.

When used in conjunction with Nallatech’s Ballynuey PCI Carrier Card (described in the Q199 issue of Xcell) you can be up and running with this DIME module in minutes. Your FPGA designs are downloaded directly over the PCI bus to the FPGAs through the integrated JTAG boundary scan chain from the supplied configuration software. No PROMs or download cables are required.

Conclusion

Nallatech’s range of DIME motherboards and modules enable you to rapidly develop custom applications without the need to design and manufacture custom PCB’s. This allows a much quicker time to market as well as a straight forward rapid prototyping platform.

For additional Xilinx information see: www.nallatech.com. ☒