

FPGA Computing Solutions



- » Proven COTS FPGA Computing Solutions
- » Complete System Offering of Hardware, Software and Enabling Tools
- » Building on Over a Decade of Expertise in FPGA Computing
- » Meeting the Needs of the Embedded Computing Market
- » Providing Technology Leadership in FPGA Computing



FPGA Computing Solutions

Proven COTS Solutions from Nallatech, the FPGA Computing Experts

Industries We Serve

Nallatech deliver market-leading FPGA Computing solutions to a range of industries including:

Defense

- » Surveillance and Reconnaissance
- » Radar
- » Signal Intelligence

Communications

- » Network Infrastructure
- » Software Defined Radio

Energy and Sciences

- » Bio-infomatics
- » Computational Fluid Dynamics
- » Geophysical

The Nallatech Difference

Proven COTS Solutions from Nallatech build on over a decade of expertise in FPGA Computing. All of this experience in developing high-performance FPGA-based compute systems is built into every product we ship. Nallatech products reflect a balance of technology leadership and controlled technology adoption, providing solutions that are designed to meet the challenging needs of our customers in the embedded computing market.

Size, Weight and Power

A key driver in the growing adoption of FPGA technology is the improvement in size, weight and power constraints gained with FPGA processing platforms compared with traditional compute systems. The high-performance capability of FPGAs means that application implementation is performed on far fewer devices than when using traditional processing technology. Users developing applications on Nallatech FPGA Computing solutions therefore benefit from a reduction in physical size and weight along with a significant drop in the power consumption of the system.

Development to Deployment

Nallatech solutions are focused on offering an end-to-end solution from development, where users' needs are centred on flexibility and ease of use, through to deployment, where packaging technology and ruggedization become the key drivers. Commonality between the application development hardware and the deployment platform offers significant risk reduction and improved time to market, while long-term support throughout customers' program lifecycles means that Nallatech solutions can be designed-in with confidence and ease.

Proven COTS Success

The Nallatech FPGA Computing product range offers the leading COTS solution on the market, with over 1500 site installations worldwide. Customers in Defense, Communications and Energy and Science rely on Nallatech solutions to implement their most demanding high-performance processing applications. With our competitive edge, we ensure that our customers keep theirs.

Key Benefits



FPGA Computing Solutions for Development to Deployment

DEPLOYMENT



Multiple-FPGA compute solutions offer maximum performance density

DENSITY



System Software and Enabling Tools reduce the application development overhead to improve time to market

SOFTWARE & TOOLS



Support for multiple application design flows provides maximum user flexibility and optimal design flow selection

APPLICATION DESIGN

FPGA System Solution

Hardware

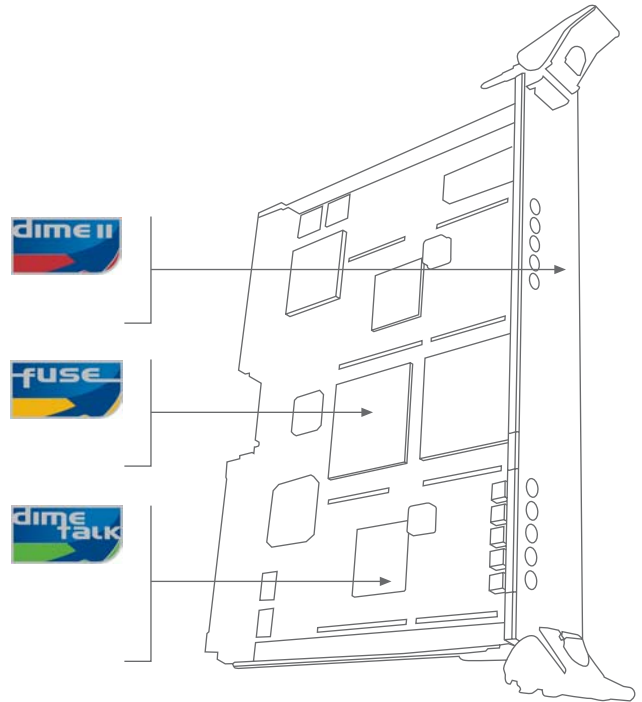
Modular hardware platforms with a high-bandwidth interconnect fabric combine multiple FPGAs, memory and digital, analog and serial fabric interfaces on form-factors such as PCI, VME, cPCI and PCI-104.

FPGA System Software

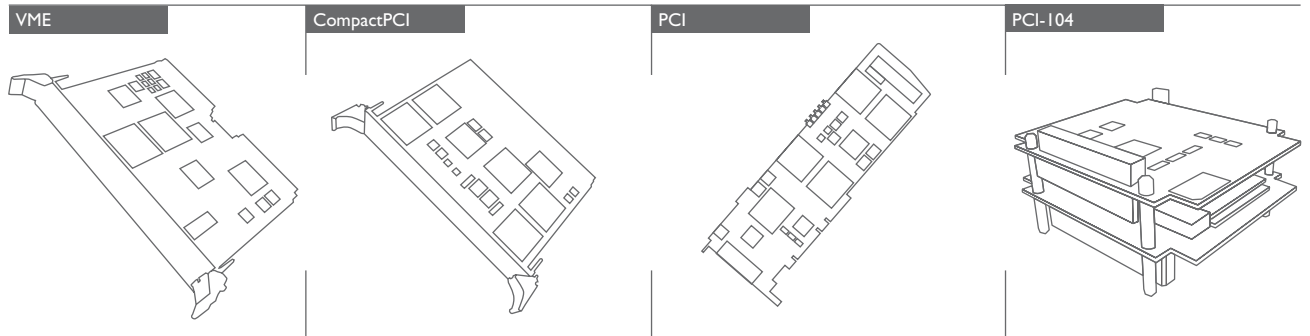
FUSE System software running on host systems including Windows, Linux and VxWorks, provides configuration, control and communication with the FPGA computing platform via APIs available in a number of programming environments.

Enabling Tools

DIMETalk is a comprehensive application development environment for FPGA Computing hardware, with support for a variety of leading high-level FPGA design tools and an integrated C-to-VHDL compiler. It abstracts the features of the hardware platform from the development environment to accelerate one of the most time-consuming elements of FPGA system design.



Form Factors



Hardware

The COTS DIME-II FPGA computing hardware offers a combination of industry-standard form-factors with a high-bandwidth architecture. Developers can use the modularity of the system to select the optimum FPGA resource and external interfaces required to construct complex processing systems targeted at their specific application requirements.

- » Carriers cards are available in PCI, VME, cPCI and PCI-104 form-factors
- » DIME-II carrier cards offer between one and four expansion slots
- » Support for Xilinx Virtex-II, Virtex-II Pro and Virtex-4 FPGAs
- » COTS Expansion modules offer one or more FPGAs along with memory and digital analog interfaces
- » Product migration program for volume deployments

Software

FUSE System Software enables developers to easily create complex processing systems with seamless integration between hardware, software and FPGA applications. FUSE provides configuration, control and communications functionality between host systems and Nallatech FPGA computing platforms, supporting the most commonly-used Operating Systems and programming languages affording users the ability to specify the most appropriate environments for their application.

- » Operating Systems – FUSE runs on Linux, Windows and VxWorks
- » APIs – FUSE APIs, including DIMETalk support, are available for C/C++ and Java
- » Support multiple FPGA platforms in a single system
- » FUSE Toolbox for MATLAB provides a direct interface from MATLAB to the FPGA hardware platform
- » TCL scripting language for easy hardware interfacing from the host

Enabling Tools

DIMETalk abstracts the features of the hardware platform to provide an easy to use development environment for implementing applications on multi-FPGA systems. Standard VHDL design flows are complemented with support for third-party compiler tools alongside an integrated C to VHDL compiler, DIME-C. Communications networks between algorithm blocks, memory and I/O interfaces can be rapidly created across multiple FPGAs through the GUI-based application development environment.

- » Support for a selection of leading FPGA compiler tools,
- » Integrated C-to-VHDL compiler, DIME-C, with floating-point support
- » Rapidly build high-speed communications networks between multiple FPGAs, memories and external interfaces
- » Comprehensive GUI-based application development environment
- » Easy run-time operation – Dedicated software interfacing API

Partnerships

Collaborations with development tool vendors, systems integrators, suppliers and educational establishments allow Nallatech to leverage the expertise and experience of our partners in the geophysical, defense and aerospace, medical imaging, data distribution and visualization systems sectors, in order to deliver complete product solutions. Nallatech also works closely with its client base to ensure that its products and services are precisely matched to customer requirements.

Research and Development

A continuing commitment to undertake and support research and development activity allows Nallatech to maintain its position as technical leader and innovator of FPGA computing solutions.

This research and development feeds into our new product introduction process, delivering enhanced product solutions for our customers.

Capabilities

As a leading provider of FPGA Computing Solutions, Nallatech is uniquely positioned to service the needs of clients across the FPGA computing community. Our highly experienced field personnel help navigate customers through our comprehensive product range to the solution that best fits their requirements. Post-delivery, all customers have access to Nallatech's renowned technical support and product updates service. Extended maintenance contracts are available for customers interested in additional support services.



For further product range information, refer to Nallatech Product Selection Guide, available from www.nallatech.com/mediacenter



For information on specific products, refer to individual Product Briefs, available from www.nallatech.com/products



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