Providing COTS Cutting Edge Technology for Defense & Aerospace Computing
Our Mission

VadaTech provides innovative embedded computing solutions that offer superior performance density for high-reliability requirements. With a unique combination of electrical, mechanical, software, and system-level expertise, VadaTech provides commercial or rugged computing solutions certified by international industry standards to support demanding applications from initial concept to end application deployment.

Best Industry Standards

Designed and manufactured in the USA, we utilize open-standard platforms from VITA and PICMG for modularity and scalability, lowering your CAPEX and risk.

AS9100 is the international Quality Management System standard for the Aviation, Space and Defense (AS&D) industry.

VadaTech has in-house certification for IPC610 acceptability of electronic assembly, IPC620 acceptability of cable harness and wire assembly and IPC J-STD-001F manufacturing and soldering process for electronics. VadaTech is an IPC Member. www.ipc.org

PICMG is the leading standards development organization in the embedded computer market. PICMG has developed standards such as AdvancedTCA®, MicroTCA® CompactPCI® or COM Express®.

FPGA Mezzanine Card, or FMC, as defined in VITA 57, provides a specification describing an I/O mezzanine module with connection to an FPGA. VadaTech is a Member of the FMC Marketing Alliance.

VITA VPX is a broadly defined technology utilizing the latest in a variety of switch fabric technologies in 3U and 6U format blades.
Award Winning

In March 2016 NASA Jet Propulsion Laboratory (JPL), a unique national research facility that carries out robotic space and Earth science missions, awarded VadaTech the Star Award in appreciation of “Continued Service of Excellence for JPL.”

In 2016 Boeing recognized VadaTech as an outstanding supplier to one of the world’s largest aerospace companies. The award specifically acknowledges:

- VadaTech’s innovative design for Boeing’s P8 program
- VadaTech’s ability to understand and support mission-critical infrastructure
- VadaTech’s excellence in quality and manufacturing processes
- VadaTech’s project management skills and flexibility

In July 2017 VadaTech received the BAE Exceptional Performance Award from BAE Systems for our work on the P8-A program. The accolade was given in recognition of VadaTech’s extraordinary efforts and contributions to the program, and adherence to BAE’s core values. As a supplier, VadaTech was instrumental in the design and manufacture of components provided to BAE Systems Information and Electronic Systems Integration group, maintaining a high level of quality while meeting on-time delivery goals.

Principal Innovation Partners

The Intel FPGA Design Solutions Network (DSN) is an ecosystem of experienced, independent worldwide companies that provide customers with valuable products and services that complement Intel FPGAs, SoCs, Structured ASICs, and Intel Enpirion® Power Solutions. VadaTech is Gold member of the Intel DSN.

Analog Devices PartnerZone is where you can go to easily connect with electronic design service companies who are members of Analog Devices Design Partner Network. VadaTech is listed in Analog Devices Engineering PartnerZone. https://ez.analog.com/

Certified by the Xilinx Alliance Program which is a worldwide ecosystem of qualified companies collaborating with Xilinx to further the development of all programmable technologies. Xilinx Certified Members demonstrate qualified expertise on the latest Xilinx devices and implementation techniques and consistently deliver high quality products and services on Xilinx programmable platforms. VadaTech has been a member of the Alliance Program since 2012.
End Use Applications

Radar
- Sea/Land/Air
- Phased Array

Sonar/Subs
- Sea/Air
- Towed Array
- Fixed
- Storage / Recorder

Signal Intelligence
- EW
- Signal Conversion/Processing
- Graphics Processing
- Networking

Mission Computing
- Command/Control
- Situational Awareness
Standard Levels of Ruggedization

Air-cooled and Conduction-cooled

ANSI/VITA47 VPX open standard provides different levels of ruggedization both in air-cooled and conduction-cooled.

PCIMG MicroTCA open standard have been tested and referenced according to international standards such as IEC, VITA, EIA, Telcordia, United States Department of Defense (MIL-STD), ISO and others. The standard includes commercial grade (MTCA.0), air-cooled rugged (MTCA.1) and conduction-cooled rugged (MTCA.3).

VadaTech supports both. Below tables are a summary of MicroTCA (above) and VPX (below) environmental categories and range.

<table>
<thead>
<tr>
<th>Environmental Category and Range</th>
<th>MicroTCA (Air cooled)</th>
<th>MicroTCA (Air cooled)</th>
<th>MicroTCA.2 (Hybrid air / conduction cooled)</th>
<th>MicroTCA.3 (Conduction cooled)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-5C to +55C</td>
<td>BASE</td>
<td>MIL-FC1</td>
<td>TEL-1</td>
</tr>
<tr>
<td></td>
<td>-40C to +55C</td>
<td>BASE</td>
<td>MIL-FC2</td>
<td>MIL-CC2</td>
</tr>
<tr>
<td></td>
<td>-40C to +70C</td>
<td>XT1-L</td>
<td>MIL-FC3</td>
<td>MIL-CC3</td>
</tr>
<tr>
<td></td>
<td>-40C to +85C</td>
<td>XT1</td>
<td>MIL-FC4</td>
<td>TEL-2</td>
</tr>
<tr>
<td></td>
<td>-40C to +70C</td>
<td>(all classes)</td>
<td>MIL-FC1</td>
<td>MIL-CC2</td>
</tr>
<tr>
<td>Non-Operating Temperature</td>
<td></td>
<td></td>
<td>MIL-FC2</td>
<td>MIL-CC3</td>
</tr>
<tr>
<td></td>
<td>-45C to +85C</td>
<td></td>
<td>MIL-FC3</td>
<td>MIL-CC4</td>
</tr>
<tr>
<td></td>
<td>-50C to +100C</td>
<td></td>
<td>MIL-CC2</td>
<td></td>
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<td></td>
<td>-55C to +105C</td>
<td></td>
<td>MIL-CC3</td>
<td></td>
</tr>
<tr>
<td>Operating Vibration</td>
<td>1g (sine)</td>
<td>BASE</td>
<td>XR1</td>
<td>TEL-1</td>
</tr>
<tr>
<td></td>
<td>3g (sine)</td>
<td></td>
<td>XR2</td>
<td>TEL-2</td>
</tr>
<tr>
<td></td>
<td>8g (random)</td>
<td></td>
<td>(all classes)</td>
<td>MIL-CC2</td>
</tr>
<tr>
<td></td>
<td>12g (random)</td>
<td></td>
<td>(all classes)</td>
<td>MIL-CC3</td>
</tr>
<tr>
<td>Operating Shock</td>
<td>15g</td>
<td>BASE</td>
<td>XR1</td>
<td>MIL-CC4</td>
</tr>
<tr>
<td></td>
<td>25g</td>
<td></td>
<td>XR2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40g / 11ms</td>
<td></td>
<td>(all classes)</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>-60m to 4000m</td>
<td>(all classes)</td>
<td>(all classes)</td>
<td>(all classes)</td>
</tr>
<tr>
<td></td>
<td>-460m to 18300m</td>
<td>(all classes)</td>
<td>(all classes)</td>
<td>(all classes)</td>
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</table>

<table>
<thead>
<tr>
<th>Option H</th>
<th>Air Cooled</th>
<th>Conduction Cooled</th>
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<tbody>
<tr>
<td>H = 0</td>
<td>AC1*</td>
<td>CC1*</td>
</tr>
<tr>
<td></td>
<td>(0°C to +65°C)</td>
<td>(-40°C to +70°C)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>C1*</td>
<td>C2*</td>
</tr>
<tr>
<td></td>
<td>(-40°C to +85°C)</td>
<td>(-50°C to +100°C)</td>
</tr>
<tr>
<td>Operating Vibration</td>
<td>AC3*</td>
<td>C3*</td>
</tr>
<tr>
<td></td>
<td>(0.04 g/Hz max)</td>
<td>(0.1 g/Hz max)</td>
</tr>
<tr>
<td>Storage Vibration</td>
<td>OS1*</td>
<td>V2*</td>
</tr>
<tr>
<td></td>
<td>(20g)</td>
<td>(0.04 g/Hz max)</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% non-condensing</td>
<td>95% non-condensing</td>
</tr>
<tr>
<td></td>
<td>95% non-condensing</td>
<td>95% non-condensing</td>
</tr>
<tr>
<td></td>
<td>95% non-condensing</td>
<td>95% non-condensing</td>
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</table>

Defense & Aerospace Computing 5
## Non-exhaustive Digitizer and Converter Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>Form Factor FPGA</th>
<th>Type</th>
<th>ADC/DAC Chip</th>
<th>#Channels</th>
<th>Sampling Speed</th>
<th>Resolution [bits]</th>
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<tbody>
<tr>
<td>DAQ523</td>
<td>AMC/Virtex-7 FPGA/MRT</td>
<td>ADC</td>
<td>ADC9653</td>
<td>12</td>
<td>125 MHz</td>
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<td></td>
<td></td>
<td>DAC</td>
<td>MAX5878</td>
<td>2</td>
<td>250 MHz</td>
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<tr>
<td>FMC228</td>
<td>FMC</td>
<td>ADC</td>
<td>ADC9234</td>
<td>4</td>
<td>1 GHz</td>
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<tr>
<td>FMC212</td>
<td>FMC</td>
<td>ADC</td>
<td>EV12AS200AZP</td>
<td>2</td>
<td>1.5 GHz</td>
<td>12</td>
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<tr>
<td></td>
<td></td>
<td>DAC</td>
<td>DAC39J82</td>
<td>2</td>
<td>2.8 GHz</td>
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<tr>
<td>FMC224</td>
<td>FMC</td>
<td>DAC</td>
<td>DAC39J84</td>
<td>4</td>
<td>2.8 GHz</td>
<td>16</td>
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<tr>
<td>FMC225</td>
<td>FMC</td>
<td>ADC</td>
<td>TI ADC12J4000</td>
<td>1</td>
<td>4 GHz</td>
<td>12</td>
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<tr>
<td></td>
<td></td>
<td>DAC</td>
<td>AD AD9129</td>
<td>1</td>
<td>5.7 GHz</td>
<td>14</td>
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<td>AMC/VPX599</td>
<td>AMC/VPX</td>
<td>ADC</td>
<td>ADC12DJ3200</td>
<td>2 to 4</td>
<td>6.4 to 3.2 GHz</td>
<td>12</td>
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<tr>
<td></td>
<td></td>
<td>DAC</td>
<td>AD9162 or AD9164</td>
<td>2</td>
<td>12 GHz</td>
<td>16</td>
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<tr>
<td>AMC/VPX597</td>
<td>AMC/VPX</td>
<td>ADC</td>
<td>AD9371</td>
<td>8 Tx</td>
<td>6.4 to 3.2 GHz</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>8 Rx</td>
<td></td>
<td></td>
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<tr>
<td>AMCS90</td>
<td>AMC</td>
<td>ADC</td>
<td>Fujitsu MB8AC2070</td>
<td>1 to 4</td>
<td>56 to 14 GHz</td>
<td>8</td>
</tr>
</tbody>
</table>

### Choose VadaTech:
- We manufacture in-house in USA
- We are technology leaders
- We commit to our customers
- We deliver complexity

### Contact VadaTech for complete system functions:
- Signal Conditioning
- High-Speed Digitizer / Converter
- Massive MIMO
- Data Processing FPGA and Digital Signal Processing
- Switch / Network expansion / Digital IO
- RAID controller / Storage
- Video media converter / Encoder / Decoder
- Clocking / GPS
- Power / Cooling / Rackmount crates

### Choose VadaTech Products / Solutions:
- Signal Conditioning
- High-Speed Digitizer / Converter
- Massive MIMO
- Data Processing FPGA and Digital Signal Processing
- Switch / Network expansion / Digital IO
- RAID controller / Storage
- Video media converter / Encoder / Decoder
- Clocking / GPS
- Power / Cooling / Rackmount crates
Support / Offering

Management System
Providing complex systems to meet demanding requirements means a comprehensive management system is needed covering program management, configuration control and lifecycle management. VadaTech supplies systems to tier 1 defence primes across continents and is experienced in addressing the needs of the mil/aero community. We work closely with our customers to match program requirements with a tailored approach.

Mechanical Design
With ever-growing focus on size and weight constraints, a clearly-focused design capability is required to provide optimum packaging solutions. VadaTech design team covers finite element and dynamic analysis supported by in-house shock/vibration stress screening, along with CFD flow simulation and thermal profiling. Our systems are used in environments from sub-surface naval to airborne (helicopter to wide-body aircraft) and deployed on major high-value assets.

Software Provision
Complex electronics is supported by enabling software that facilitates development and allows users to concentrate on application development. This ranges from BSP and VHDL to switch management and a comprehensive data acquisition portfolio. Most software is deployed across commercial as well as mil/aero markets, resulting in a rich and diverse user base that enhances robustness.

Technical Support
With tight program schedules and long in-service life, this market sector demands well-structured support from cradle to retirement, and VadaTech operates as an extension to our customers’ development and logistics organisations. Development and support teams are located across time zones to ease customer communication and extend availability.

VadaTech International 24-hour Support
Choose VadaTech

We are technology leaders
• First-to-market silicon
• Continuous innovation
• Open systems expertise

We commit to our customers
• Partnerships power innovation
• Collaborative approach
• Mutual success

We deliver complexity
• End-to-end Processing
• System management
• Configurable solutions

We manufacture in-house
• Agile production
• Accelerated deployment
• AS9100 accredited

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