Providing COTS Cutting Edge Technology for

Defense & Aerospace Computing

vadatech
THE POWER OF VISION

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.

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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.

Choose VadaTech:

- We manufacture in-house in USA
- We are technology leaders
- We commit to our customers
- We deliver complexity

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
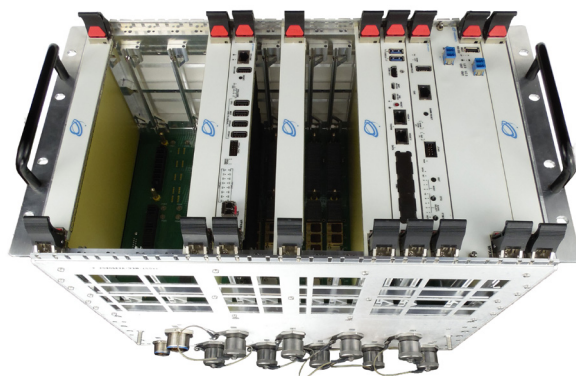- Fixed
- Storage / Recorder

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.

Environmental Category and Range		MTCA.0 (Air cooled)	MTCA.1 (Air cooled)	MTCA.2 (Hybrid air / conduction cooled	MTCA.3 (Conduction cooled)
Operating Temperature	-5C to +55C	BASE	BASE	MIL-FC1	TEL-1
	-40C to +55C		XT1-L	MIL-FC2	MIL-CC2
	-40C to +70C			MIL-FC3	MIL-CC3
	-40C to +85C		XT1	MIL-FC4	TEL-2 MIL-CC4
Non-Operating Temperature	-40C to +70C	BASE	(all classes)		TEL-1
	-40C to +85C			MIL-FC1 MIL-FC2	MIL-CC2
	-45C to +85C				TEL-2
	-50C to +100C			MIL-FC3	MIL-CC3
	-55C to +105C			MIL-FC4	MIL-CC4
Operating Vibration	1g (sine)	BASE			TEL-1
	3g (sine)		XR1		
	8g (random)		XR2		TEL-2
	12g (random)			(all classes)	MIL-CC2 MIL-CC3 MIL-CC4
Operating Shock	15g	BASE			TEL-1
	25g		XR1		TEL-2
	20g / 11ms		XR2		
	40g / 11ms			(all classes)	MIL-CC2 MIL-CC3 MIL-CC4
Altitude	-60m to 4000m	BASE	(all classes)		
	-460m to 18300m			(all classes)	(all classes)

	Air Cooled		Conduction Cooled		
Option H	H = 0	H = 1	H = 2	H = 3	H = 4
Operating Temperature	AC1* (0°C to +55°C)	AC3* (-40°C to +70°C)	CC1* (0°C to +55°C)	CC3* (-40°C to +70°C)	CC4* (-40°C to +85°C)
Storage Temperature	C1* (-40°C to +85°C)	C3* (-50°C to +100°C)	C1* (-40°C to +85°C)	C3* (-50°C to +100°C)	C3* (-50°C to +100°C)
Operating Vibration	V2* (0.04 g2/Hz max)	V2* (0.04 g2/Hz max)	V3* (0.1 g2/Hz max)	V3* (0.1 g2/Hz max)	V3 (0.1 g2/Hz max)
Storage Vibration	OS1* (20g)	OS1* (20g)	OS2* (40g)	OS2* (40g)	OS2* (40g)
Humidity	95% non-condensing	95% non-condensing	95% non-condensing	95% non-condensing	95% non-condensing

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Products / Solutions

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

Non-exhaustive Digitizer and Converter Summary

Model	Form Factor FPGA	Type	ADC/DAC Chip	#Channels	Sampling Speed	Resolution [bits]
DAQ523	AMC Virtex-7 FPGA/MRT	ADC	AD9653	12	125 MHz	16
		DAC	MAX5878	2	250 MHz	16
FMC228	FMC	ADC	AD9234	4	1 GHz	12
FMC212	FMC	ADC	EV12AS200AZP	2	1.5 GHz	12
		DAC	DAC39J82	2	2.8 GHz	16
FMC224	FMC	DAC	DAC39J84	4	2.8 GHz	16
FMC225	FMC	ADC	TI ADC12J4000	1	4 GHz	12
		DAC	AD AD9129	1	5.7 GHz	14
AMC/VPX599	AMC/VPX	ADC	ADC12DJ3200	2 to 4	6.4 to 3.2 GHz	12
		DAC	AD9162 or AD9164	2	12 GHz	16
AMC/VPX597	AMC/VPX	ADC	AD9371	8 Tx 8 Rx	6.4 to 3.2 GHz	12
AMC590	AMC	ADC	Fujitsu MB8AC2070	1 to 4	56 to 14 GHz	8

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

Sales EUMEA Integration Support

R&D Support

Head-Quarters Manufacturing and R&D Sales and Support

Sales APAC R&D Support

R&D

Contact

VadaTech Corporate Office

198 N. Gibson Road
Henderson, NV 89014
+1 702 896-3337

Asia Pacific Sales Office

7 Floor, No. 2, Wenhu Street
Neihu District, Taipei
114,Taiwan
+886-2-2627-7655

VadaTech European Sales Office

VadaTech House, Bulls Copse Road
Totton, Southampton
SO40 9LR United Kingdom
+44 2380 016403

info@vadatech.com | www.vadatech.com

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

AS9100 CERTIFIED   ISO

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