

VT505

16 Channels of ADC with 32-bit $\Delta\Sigma$ with synchronization across the channels and across multiple boards for high channel count



VT505

Key Features

- 16 Channels of ADC with Differential 32-bit $\Delta\Sigma$
- 8 to 768 kHz sampling
- S/(N+D) of ~112dB
- Four types of LPF, Digital HPF
- Ideal for sonar applications
- AMD Zynq Ultrascale+
- Synchronized sampling by utilizing IEEE1588/SyncE and/or an external clock such as 1PPS from GPS
 - Allows hundreds of channels to be synchronised using a simple network connection

Benefits

- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company



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VT505

The VT505 is a custom form factor which allows having 16 ADC channels that are synchronized to IEEE1588/SyncE and/or to an external clock source (i.e. 1PPS from GPS).

Each ADC is 32-bit differential $\Delta\Sigma$ with sampling rate from 8 to 768 KHz. The S/(N+D) is ~112dB. Internal filters with four types of LPF and digital HPF.

Each of the analog inputs are mounted on its own custom daughter module. The versatility of the design allows the front-end analog design to be changed for application specific designs such as changing of the amplifiers, attenuators, filter, etc.

The module has an AMD Zynq Ultrascale+ FPGA to capture the analog signals. The control and data transport are via Ethernet.

The VT505 in conjunction with the VT801 and the VT979 chassis allows a total of 64 channels of analog input in a 4U rack mount space. Deploying multiples of VT979 allows hundreds, if not thousands, of the ADC to be fully synchronized to the network clock and/or a common external clock (i.e. 1PPS from the GPS).

The VT505/VT801/VT979 system is ideal for sonar applications that requires hundreds to thousands of channels to be fully synchronized and not dependent on the locality of the systems.



Figure 1: VT505



Figure 2: VT505 Front View

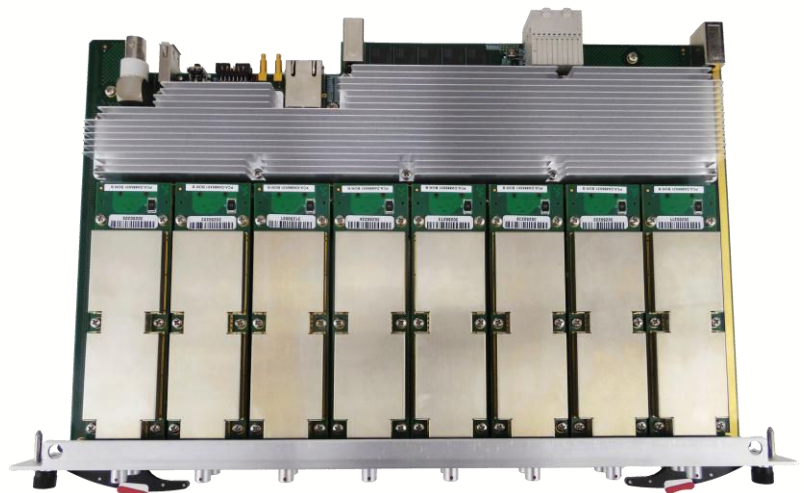


Figure 3: VT505 Top View

Block Diagram

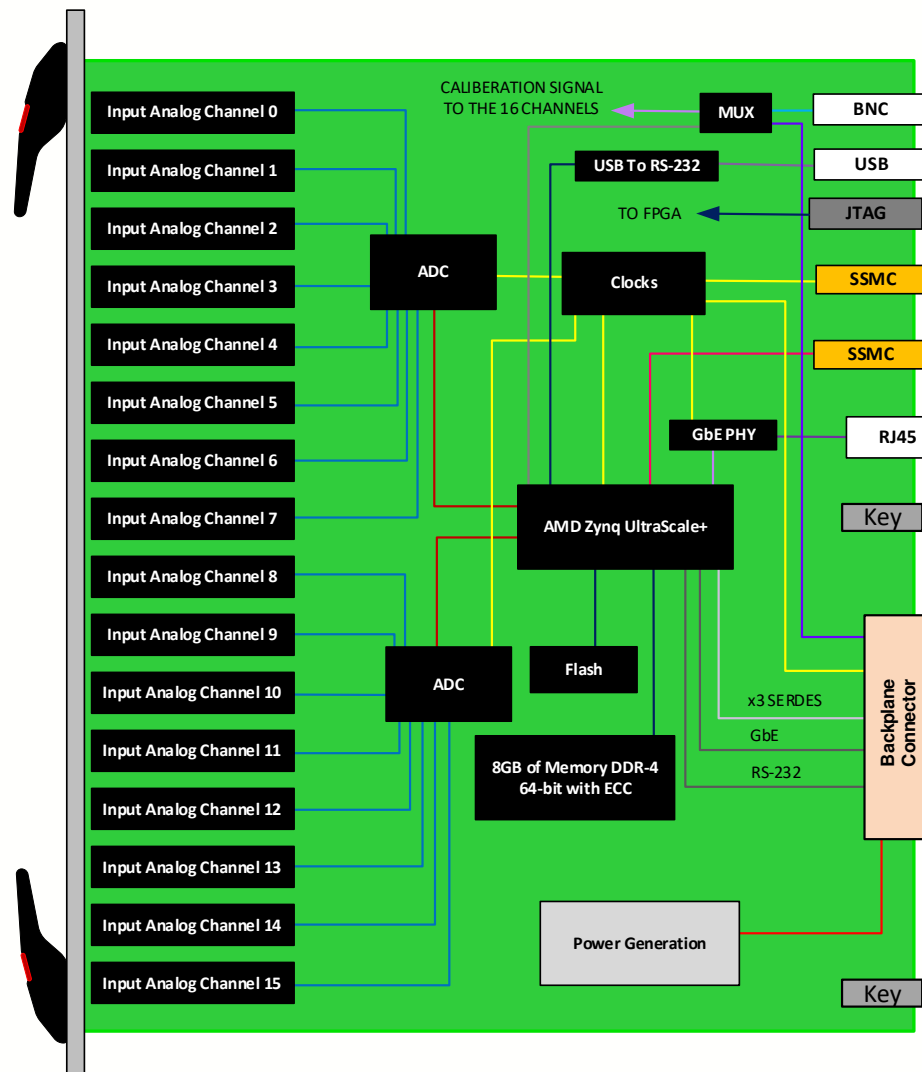


Figure 4: VT505 Functional Block Diagram

Front Panel

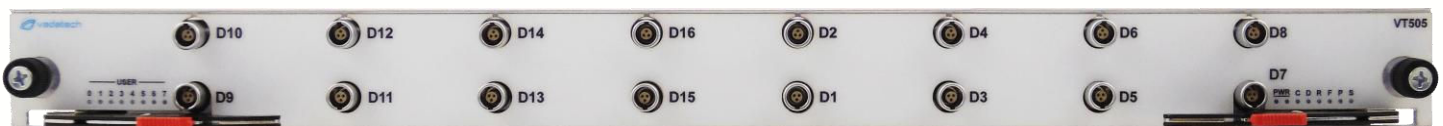


Figure 5: VT505 Front Panel View

Specifications

Architecture		
Physical	Dimensions	6HP; 9U length
Configuration		
Power	VT505	25W
Rear Panel	Connectors	JTAG, 2x SSMC
		GbE via RJ-45; BNC for calibration signal
		USB to RS-232
VPX Interfaces	Slot Profiles	See Ordering Options
	Backplane	GbE
		3x SERDES
		1PPS, 10MHz, Calibration signal
	Power Supplies	+12V
Other		
MTBF	MIL Hand book 217-F@ TBD hrs	
Certifications	Designed to meet FCC, CE and UL certifications, where applicable	
Standards	VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards	
Warranty	Two (2) years, see VadaTech Terms and Conditions	

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of OpenVPX, ATCA and MTCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTMs), Power Modules, and more. The company also offers integration services as well as pre-configured Application-Ready Platforms. Please contact VadaTech Sales for more information.

Ordering Options

VT505 – A00-000-GHJ

A = Front Analog Module*		G = Panel Height
0 = DA884/DA886 1 = Reserved 2 = Reserved		0 = 6HP
		H = Environmental
		0 = Commercial 1 = Industrial
		J = Conformal Coating
		0 = No coating 1 = Humiseal 1A33 Polyurethane 2 = Humiseal 1B31 Acrylic 3 = Parylene

Environmental Specification

*Note: Option A=0 will use 8x DA884 and 8x DA886

Related Products

VT801



- Ethernet Switch
- 1GbE to each slot with 1GbE and 10GbE uplink
- Up to four VT505 could be utilizing with the VT979 Chassis and a single VT801

VT979

- 4U Chassis that accepts VT801 and four VT505s
- Total of 64 ADC Channels with 32-bit $\Delta\Sigma$ when equipped with four VT505s
- Universal AC input with circular connector

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