



SPECIFICATIONS

AT-VPX1000 - Performance Specifications PRELIMINARY

Document Name

Open VPX ADC Board: AT-VPX1000 + Tektronix TADC1000

Date: 04/06/2012

Typical values cover the expected performance over ambient temperature ranges of 23°C ± 5°C with a 95% confidence level and humidity < 50%.

Number of Analog Channels	2
Ch1, Ch2 Input (Differential p-p)	
Input connector	SMA
Voltage Max	512 mV
Analog Bandwidth	> 8 GHz
Resolution	8 Bit
Sample Rate	1 Ch.@12.5 GS/s 2 Ch.@6.25GS/s
ENOB	7.0 - 7.4 bits @ 10MHz 6.2 – 6.6 bits @ 5 GHz ¹
Input	± 256 mV differential into 100 Ω AC-coupled
Input VSWR	1.3:1 @ 2 GHz 1.6:1 @ 6 GHz
TADC-1000 Clock IN Requirements	Frequency Range 1.6 GHz – 3.125 GHz Short-term Jitter < 400 fs
Interface 1	OpenVPX 6U
Interface 2	USB for debugging purposes
Interface 3	JTAG for onboard VHDL debugging
FPGA A1,A2	Virtex6 XC6VSX315T-FFG1156 ²
FPGA B	Virtex6 XC6VLX365T-FFG1156 ³
On Board Memory	RLDRAMx36 Bit, 576 Mbit
On Board Freq. Synthesizer	2 GHz - LMX2541SQ2060E ⁴
Digital Data, Differential	
Input/Output connector	SAMTEC FMC
Voltage Range	LVDS-25
Frequency Range	200 MHz – 400 MHz
Reference Clock	
Input connector	SAMTEC FMC
Voltage Range	LVDS-25
Frequency Range	200 MHz – 400 MHz
MARK Strobe (Valid Data)	
Input connector	SAMTEC FMC
Voltage Range	LVPECL-25

¹ FPGA utilization is approximately 29% of FPGA registers, 18% of FPGA 4 input LUTs and 65% of FPGA block RAM.

² See the list of the compatible Xilinx Virtex6 devices

³ See the list of the compatible Xilinx Virtex6 devices

⁴ See the list of the compatible Frequency Synthesizer devices



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Minimum pulse	100 ns
GATE	
Output connector	SAMTEC FMC
Voltage Range	LVDS-25
Minimum pulse	200 ns
ADC Clock, Differential (p-p)	
Output connector	SMA
Voltage Range	500mV – 2600mV
Frequency Range	1.6 GHz – 3.125 GHz
External Clock IN	
Input connector	SMA
Input Voltage Range	TBD
Impedance	500 Ω, AC Coupled
Frequency	20 MHz
Damage Level	+16 dBm MAX ±25VDC MAX
External Clock OUT	
Output connector	SMA
Frequency	20 MHz
Output impedance	50 Ω, AC Coupled

FPGA Devices Compatible List

Virtex6 Model	Package
XC6VSV315T	FFG1156
XC6VSV475T	FFG1156
XC6VLX365T	FFG1156
XC6VLX240T	FFG1156
XC6VLX195T	FFG1156
XC6VLX130T	FFG1156

Freq. Synthesizer Compatible List

Device	VCO Frequency
LMX2541SQ2060E	1990 - 2240
LMX2541SQ2380E	2200 - 2530
LMX2541SQ2690W	2490 - 2865
LMX2541SQ3030E	2810 - 3230



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