AT1120 FlexRIO Adapter Module

Specifications		
Number of Analog Channels	1	
DAC Resolution	14 Bit	
Sampling Rate	2 GS/s	
DC-coupled analog output		
Characteristics	**DC Output**	
Output type	Single ended or differential	
Impedance	50 Ω / 100 Ω	
Amplitude[1], 50 Ω Load (1KHz sine wave) Full Scale Range, Single Ended Fulle Scale Range, Differential Resolution	1 Vp-p (1.1Vpp without calibration) 2 Vp-p (2.2 Vpp without calibration) 3 digits, < ± (0.07% of amplitude range), <1mV	
Vocm (Output common mode voltage) Range Resolution, 50 Ohm load	-0.9 V to 0.9V Open, -0.45V to 0.45V@50 Ω load <10mV	
Rise/fall time (10% to 90%)	340 ps (Pulse at 0.5 Vp-p S.E.)	
Bandwidth (0.35/Trise)	1 GHz, typical (calculated)	
Analog Bandwidth,-2 dBm (sine wave at 0.5 Vpp)	1 GHz (compensating for DAC sin(x)/x roll-off), typical	
Analog Bandwidth, +3 dBm (-1dBFs) (sine wave at 0.9 Vpp)	750 MHz (compensating for DAC sin(x)/x roll-off), typical 550 MHz (not compensating for DAC sin(x)/x roll-off), typical	
Overshoot	Less than 5% (at 0.5Vp-p)	
Random Jitter on clock pattern, typ	<5 ps	
SFDR (including Harmonics)[2] @ **2GS/s**, typical Sine Wave (62.5001 MHz) Sine Wave (125.0002 MHz) Sine Wave (250.0004 MHz)	S.E. (DC to 800MHz) -67 dBc, 0.5Vp-p -66 dBc, 0.5p-p -57 dBc, 0.5p-p	Diff. (DC to 800MHz) -71 dBc, 1Vp-p -66 dBc, 1Vp-p -58 dBc, 1Vp-p
Non Harmonic Distortion, typical	-79 dBc, 1Vp-p, DC to 800 MHz	

[1] Gain,offset,Vocm calibrated

[2] Waveforms were generated using DDS (Direct Digital Synthesis) with a waveform table size of 2048 samples and a phase accumulator of 32 bits. Long, non-repetitive, waveforms such as modulated or DDS (Direct Digital Synthesis)-based signals offer better spurious performance.
For periodic waveforms represented by a small number of unique samples, DAC nonlinearities limit dynamic specifications. SFDR performance may be worse at signal frequencies near to integer submultiples of the sampling frequency due to harmonic stacking on images (ex. Fs/N with N=8,16,32).

Phase noise Internal clock, typical	10 MHz	62.5 MHz (32 points waveform)	110 MHz
1 KHz offset	-126 dBc/Hz	-110 dBc/Hz	-107 dBc/Hz
10 KHz offset	-137 dBc/Hz	-123 dBc/Hz	-118 dBc/Hz
100 KHz offset	-148 dBc/Hz	-137 dBc/Hz	-131 dBc/Hz
1 MHz offset	-154 dBc/Hz	-153 dBc/Hz	-152 dBc/Hz
AO 0+ / AO 0-	**DC Output**		
Output connector	SMA		
Output impedance	50Ω S.E. / 100Ω Diff.		
Io max @ 50 Ohm load	22 mA		
External Clock IN			
Input connector	SMA		
Input Voltage Range	-10 dBm to 8 dBm		
Impedance	50 Ω, AC Coupled		
Frequency	2 GHz (within ±0.1%)		
Damage Level	+14 dBm MAX ±25VDC MAX		
External Trigger Input			
Input connector	SMA		
Max data rate	140 Mbps		
Input impedance	100K Ω		
Trigger Level VIH min VIL max	 1.75V 0.75V		
Damage level	VINmax < 6.5 V VINmin > -0.5V		
Slope	Rising Edge or Falling		
External Trigger Output			
Output connector	SMA		
Output level	3.3V open, 1.65V with 50 Ohm load		
Output impedance	50 Ohm nominal		

- *Typical* values describe useful product performance beyond specifications that are not covered by warranty and do not include guardbands for measurement uncertainty or drift. Typical values may not be verified on all units shipped from the factory.
- Unless otherwise noted, typical values cover the expected performance of units over ambient temperature ranges of 23 °C ± 5 °C with a 95% confidence level and humidity < 50%, based on measurements taken during development or production.
- Specifications are subject to change without notice. For the most recent specifications, visit www.activetechnologies.it