

DAx11500z - 1CH, 1.5 GS/sec, 9-Bit, Arbitrary Waveform Generator (USB interface)

Made by WavePond® - A division of Chase Scientific LLC

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FEATURES

- (1) Chan, 1.5 GS/sec/chan, 9-Bit D/A resolution
- Full scale Trise/Tfall = 150 picoseconds (typ)
- DC Coupled into 50 ohms
- (1) 3.3V TTL Marker Output (Rs = 50 ohms)
- 8 KSamples / channel
- 1ppm Internal Clock Stability, < 5psec Jitter
- SFDR less than -40 dbc @ 400 MHz (min)
- Internal Master Clock, Int./Ext. Trigger
- Walnut & Aluminum USB Enclosure
- Windows GUI, Command Line API, (Python for Windows / Linux coming soon ...)



APPLICATIONS

- Radar Signal Generation and Testing
- Telecom / Data Communications
- Optical and Magnetic Storage Testing
- Arbitrary RF Signal Generation
- Wireless Communications Testing
- Real World Simulations
- Network Analysis
- Pulse Generation

DESCRIPTION

General

The 1.5 GS/Sec, DAx11500z is a highly versatile PC controlled Arbitrary Waveform Generator. It has an unusually wide bandwidth output in excess of 2.3 GHz which is perfect for fast time domain signals. However, you can download almost any waveform that the user can imagine. Whether it be random noise, a custom shaped pulse, a pure sine wave, a modulated subcarrier, or an encoded radar signature, the DAx11500 will faithfully reproduce it. The only limitation is the short memory which was done to meet our manufacturing and cost goals.

The high speed D/A converter (DAC) can be clocked internally or externally (opt.). Because the DAC is only running at 38% of its maximum clock rate of 4.0 GHz, the signal quality is exceptional. Most products in the AWG market are usually running at their maximum clock rates at reduced quality to meet marketing goals.

Triggering

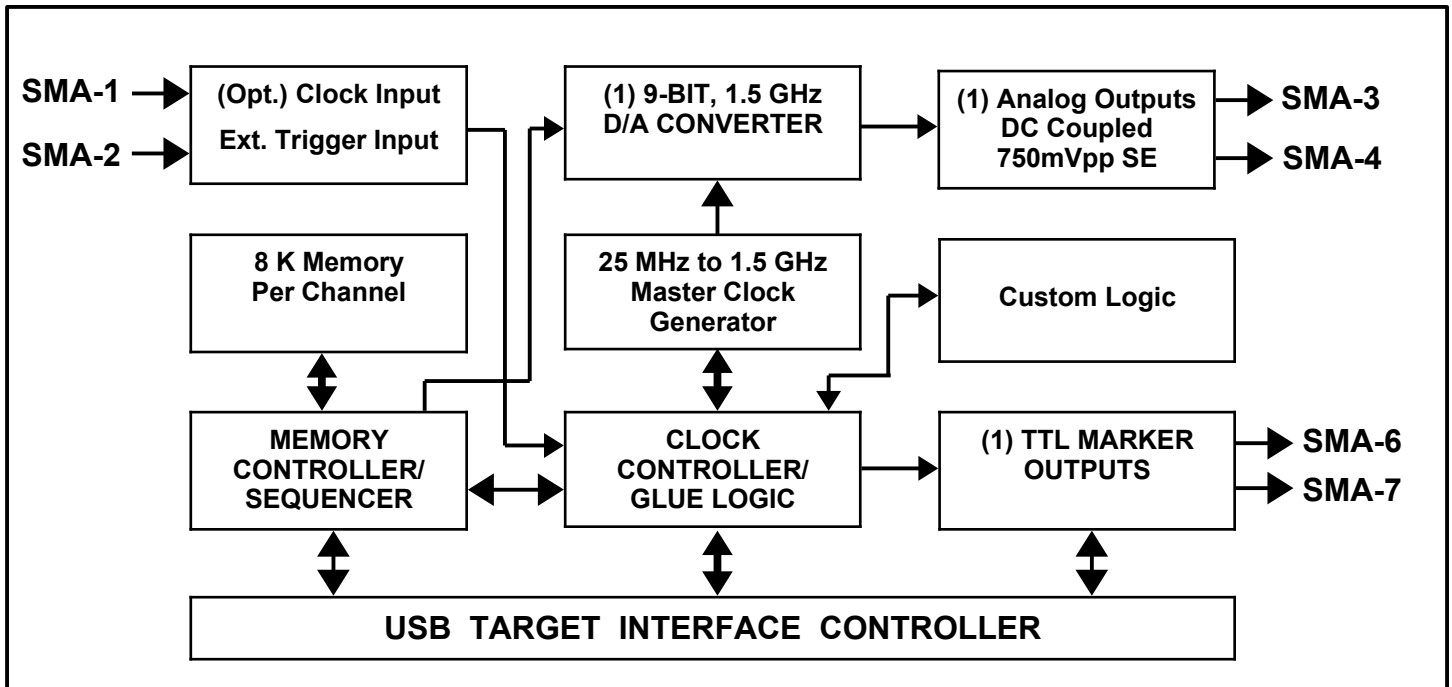
The DAx11500z board can be triggered by an external 3.3V TTL signal or software command. Looping can be set for continuous or per single trigger.

Memory

The DAx11500z comes standard with 8 KSamples of memory of dual channel SRAM. This means it has the capability of updating the waveform while its outputting.

GUI Interface and API

The DAx11500z comes with a GUI program that can perform tasks like loading waveforms from a file to generating sine / square / and triangle waves, changing clock rates, triggering etc. The API for the DAx11500z is a simple EXE that allows command line calls (or file I/O) for controlling the generator.



DAx11500z BLOCK DIAGRAM

SPECIFICATIONS

Analog Output: (Dual Channel) (T=25°C unless otherwise stated)		
Parameter	Conditions/other	Typical Values
Vertical Resolution	Fclk = 1.5 GHz	9-Bit (1 out of 511)
Output Impedance/Coupling Amplitude		50 ohms / DC Coupling
Full Scale	Fclk = 1.5GHz	750 mVpp typical single-ended into 50 ohms (SMA connectors)
Rise Time (20-80%, no filters)		150 psec typical into 50 ohms
Fall Time (20-80%, no filters)		150 psec typical into 50 ohms
Internal Clock Jitter		< 5 psec typical
Delay between trigger and output		TDB typical @ 1.5 GSPS
Maximum re-trigger rate		1 MHz
SFDR (Spurious Free Dynamic Range) DC < Fout < 400 MHz, Fclk = 1.50 GHz < -40 dB Minimum		
Internal Clock Rate Generator		
Frequency range		25 MHz to 1.5 GHz
Resolution		< 10 KHz (typ.)
Stability	T = 0°C – 70°C	+/- 1 ppm
Memory		
Waveform	Base Model	8000 Words x 9-Bits
# of User Segments		1
Segment Size Range		16 Samples up to total memory
Segment Resolution		4 Samples
Maximum Segment Loops		once/trig and Infinite only
DIGITAL OUTPUTS:		
(1) TTL Marker	Once at beginning of waveform. 50 ohms output impedance, 3.3VTTL	
DIGITAL INPUTS:		
Ext. Clk Input	(custom Option) 50 ohms SMA inputs: 10 MHz to 1.5 GHz, square Wave, 0dBm-10dBm, AC coupled.	

TTL Trigger Input Rising Edge Retriggerable SMA connector, DC coupled, Threshold=1.0V, 50 ohms.

ENVIRONMENTAL (DAx22000)

Temperature	
Operating	15°C to 30°C Ambient
Non-operating	-40°C to 85°C
Humidity	
Operating	20% to 80% (no condensation)
Nonoperating	5% to 95% (no condensation)
Power	
+12V	7 Watts Typical
Size	
DA22000-Box	L=6.0", W=6.75", H=2.25"

ORDER INFORMATION

<i>Model Number</i>	<i>Description</i>
DAx11500z	1-Ch, 1.5 GSPS w / 8 K Memory

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