

# DAx11500z-USB3, 1CH, 1.5 GS/sec, 9-Bit, Arbitrary Waveform Generator

Made by WavePond® - A division of Chase Scientific LLC

Last Updated 2024-10-31

## FEATURES

- (1) Chan, 1.5 GS/sec/chan, 9-Bit D/A resolution
- Controlled over USB / Ethernet with text files
- Full scale Trise/Tfall = 150 picoseconds (typ)
- DC Coupled into 50 ohms, 750 mVpp (typ)
- (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 Enclosure w/ 12V, Ethernet
- Windows GUI for Windows 10/11



## 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-USB3 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

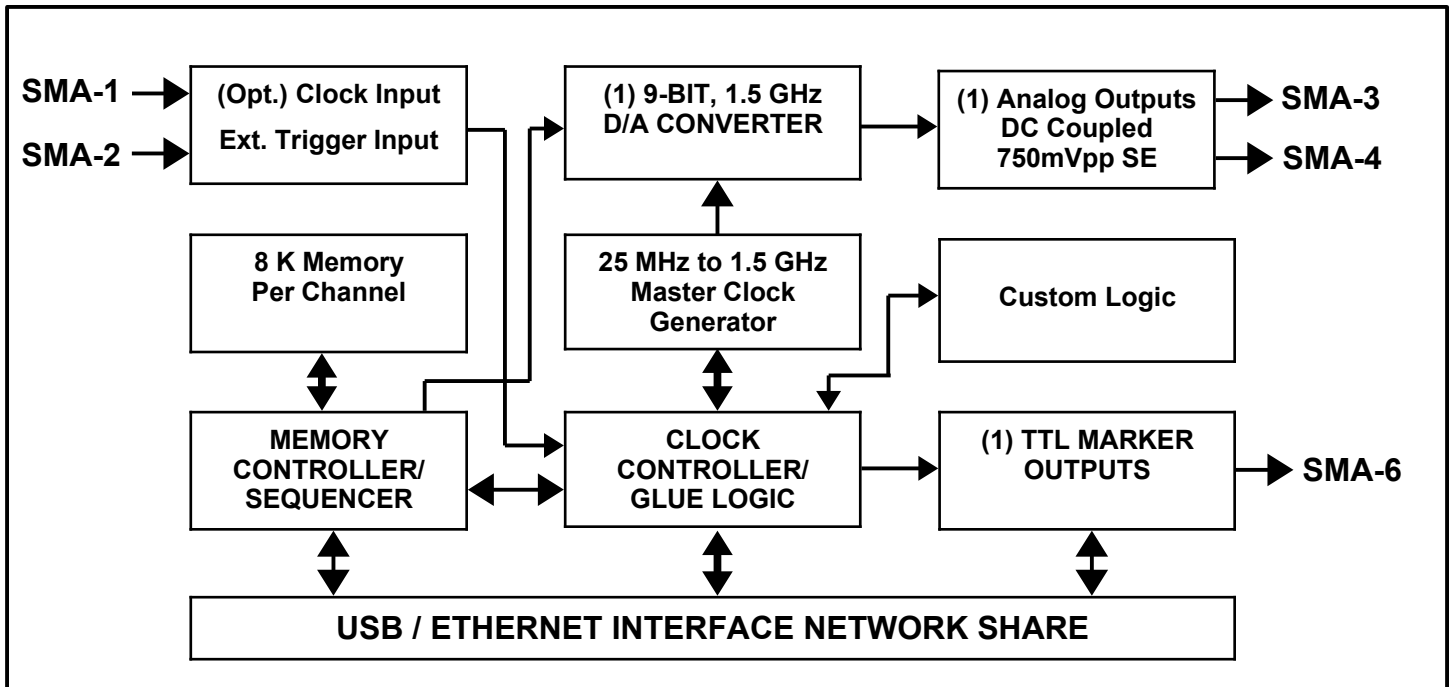
The DAx11500z-USB3 can be triggered by an external 3.3V TTL signal or software command. Looping can be set for continuous or per single trigger.

### Memory

The DAx11500z-USB3 comes standard with 8 KSamples of dual channel SRAM. This means it has the capability of updating the waveform while its outputting.

### GUI Interface and API

The DAx11500z-USB3 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 is simply copying text files from the user PC to the network share on the DAx11500z-USB3.



**DAx11500z-LAN BLOCK DIAGRAM**

**SPECIFICATIONS**

<b>Analog Output:</b>	<b>(Dual Channel)</b> (T=25°C unless otherwise stated)	
<b>Parameter</b>	<b>Conditions/other</b>	<b>Typical Values</b>
<b>Vertical Resolution</b>	Fclk = 1.5 GHz	9-Bit (1 out of 511)
<b>Output Impedance/Coupling Amplitude</b>		50 ohms / DC Coupling
Full Scale	Fclk = 1.5GHz	750 mVpp typical single-ended into 50 ohms (SMA connectors)
<b>Rise Time (20-80%, no filters)</b>		150 psec typical into 50 ohms
<b>Fall Time (20-80%, no filters)</b>		150 psec typical into 50 ohms
<b>Internal Clock Jitter</b>		< 5 psec typical
<b>Delay between trigger and output</b>		TDB typical @ 1.5 GSPS
<b>Maximum re-trigger rate</b>		500 kHz
<b>SFDR (Spurious Free Dynamic Range)</b>	DC < Fout < 400 MHz, Fclk = 1.50 GHz < -40 dB Minimum	
<b>Internal Clock Rate Generator</b>		
Frequency range		25 MHz to 1.5 GHz
Resolution		< 10 KHz (typ.)
Stability	T = 0°C – 70°C	+/- 1 ppm
<b>Memory</b>		
Waveform	Base Model	7936 Words x 9-Bits
<b># of User Segments</b>		1
<b>Segment Size Range</b>		16 Samples up to total memory
<b>Segment Resolution</b>		4 Samples
<b>Maximum Segment Loops</b>		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)**

<b>Temperature</b>	
<b>Operating</b>	15°C to 30°C Ambient
<b>Non-operating</b>	-40°C to 85°C
<b>Humidity</b>	
<b>Operating</b>	20% to 80% (no condensation)
<b>Nonoperating</b>	5% to 95% (no condensation)
<b>Power</b>	
+12V	10 Watts Typical
<b>Size</b>	
DA22000-Box	L=6.0", W=8.75", H=2.25"

**ORDER INFORMATION**

<i>Model Number</i>	<i>Description</i>
DAx11500z-USB3	1-Ch, 1.5 GSPS, 9-bits with 8 K Memory

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