

Arbitrary Waveform Generator

NOV@TEK

DDS Arbitrary Waveform Generator

Introduction



A compact and powerful Arbitrary Waveform Generator + High Precision Frequency Counter at the surprising lowest price!

You can choose the regular waveforms and set the parameters. The Arbitrary Waveform can be edited point by point or just by draw the curve arbitrarily on the screen by the mouse like drawing a picture!

It also has the advanced and unique 8 bits digital input and output, synchronized signal outputs and external trigger input for digital electronics research

Two channels of Counter and Frequency measurement inputs.

The data format is completely compatible with that of Tektronix oscilloscope and waveform generator. The DDS technology enables the high frequency accuracy, high waveform resolution, high reliability, and wide software support.

It is widely used in electronic labs and for auto-test !

Model Selection

| Product | Freq. Range | Counter Range | Digital Input/Output | Record Length | Resolution |
|----------|-------------|---------------|----------------------|---------------|------------|
| DDS-3005 | 5MHz | DC~2.7GHz | 8 bits | 256KSa | 14 bits |

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Features

USB2.0 PC interface

The true USB2.0 interface allows fast data transfer rate that ensures a quick screen update rate, even when collecting large amounts of data.

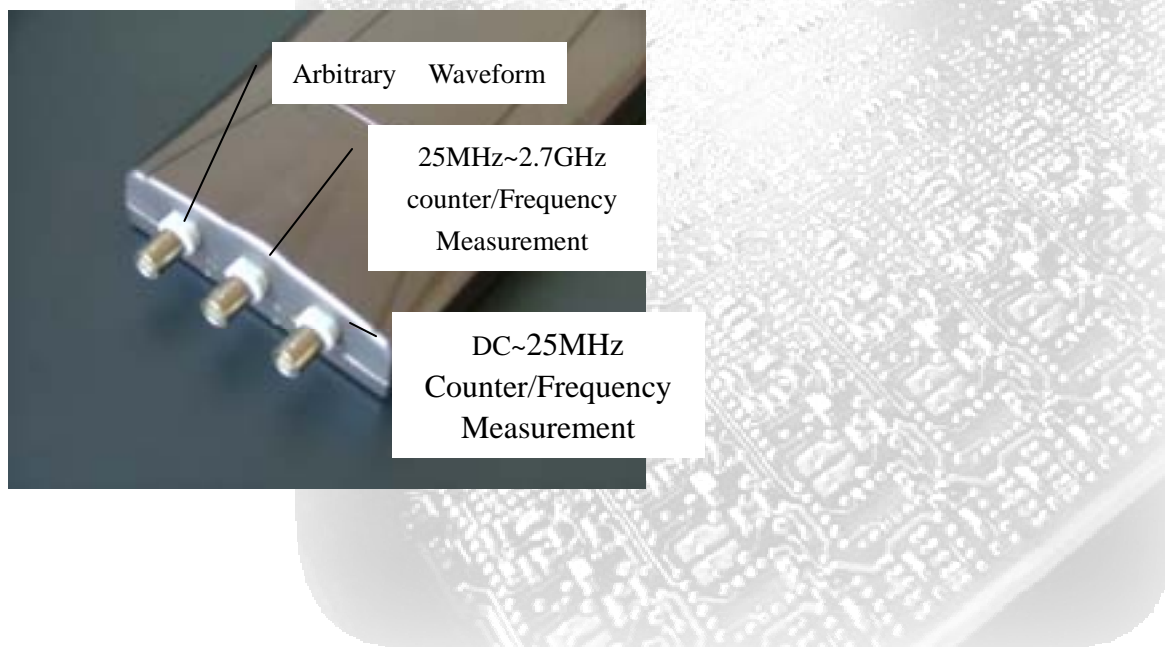
The plug&play character is very convenient for user to set up and connect the instrument to PC.

The device is powered directly from the USB bus that reduces the traditional power transformer.

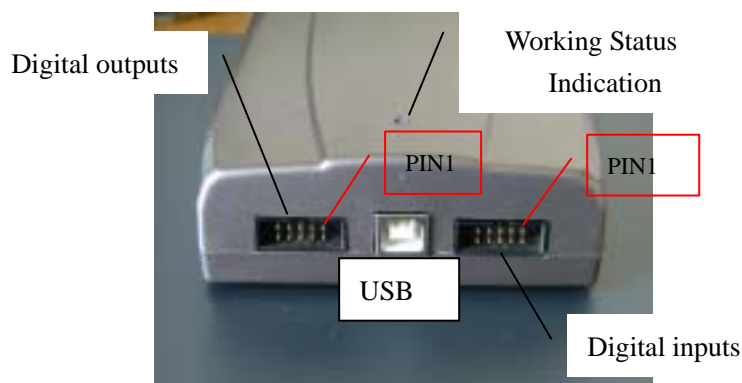
The USB2.0 driver is compatible with USB1.1.



And the two channel of the frequency counter input: CH1 DC~25MHz and CH2 25MHz~2.7GHz



8Bits digital input and output, Synchronized signal, External Trigger



Rear Panel

| | |
|-------|----------------------------|
| PIN1 | Bit7 |
| PIN2 | Bit6 |
| PIN3 | Bit5 |
| PIN4 | Bit4 |
| PIN5 | Bit3 |
| PIN6 | Bit2 |
| PIN7 | Bit1 |
| PIN8 | Bit0 |
| PIN9 | Synchronized Signal Output |
| PIN10 | Digital Ground |

Digital Output Port Definition

| | |
|-------|------------------------|
| PIN1 | Bit7 |
| PIN2 | Bit6 |
| PIN3 | Bit5 |
| PIN4 | Bit4 |
| PIN5 | Bit3 |
| PIN6 | Bit2 |
| PIN7 | Bit1 |
| PIN8 | Bit0 |
| PIN9 | External Trigger Input |
| PIN10 | Digital Ground |

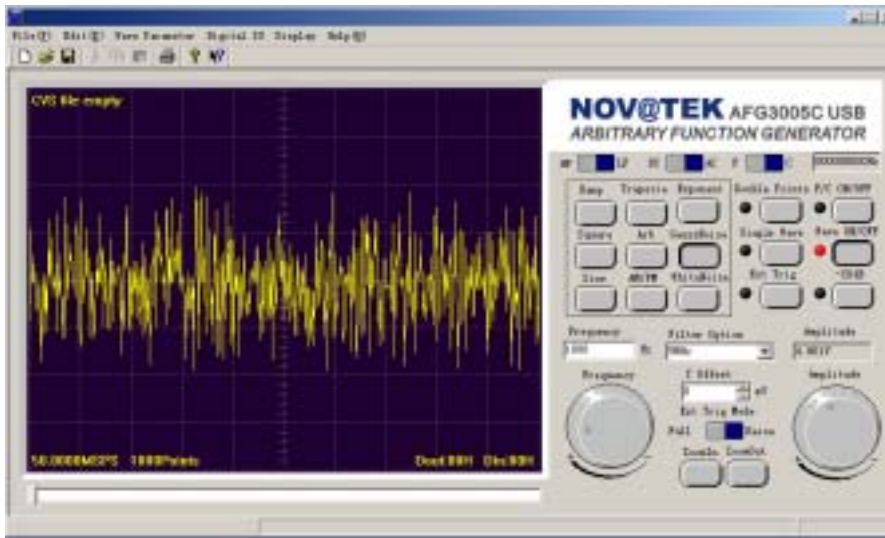
Digital Input Port Definition

A full function waveform generator of the range 0~5MHz, with all regular waveforms selectable, such as Sine, Square, Tri-angle, Saw-tooth, TTL, White Noise, Gauss Noise, Trapezia, Exponent, AM and FM, and the parameters settable, such as frequency, amplitude, offset, modulation depth.

The arbitrary waveform edited just by drawing with the mouse and edit can be done just by mouse or by value-setting point by point

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The 14 bits high D/A resolution make less distortion rate.

Auto zero calibration to adjust the zero floating because of environment reasons.

The data format is “.CSV”. Its format is compatible with the CSV file produced by the Tektronix ARBExpress software. User can edit or set up the required CSV waveform and also use Excel to open and edit the CSV wave files.

DDS technology, High accuracy and resolution, wide software supporting. It can widely use in the various kinds of electronics labs and it offers complete interface for second time development to be jointly inserted into other auto-measuring systems

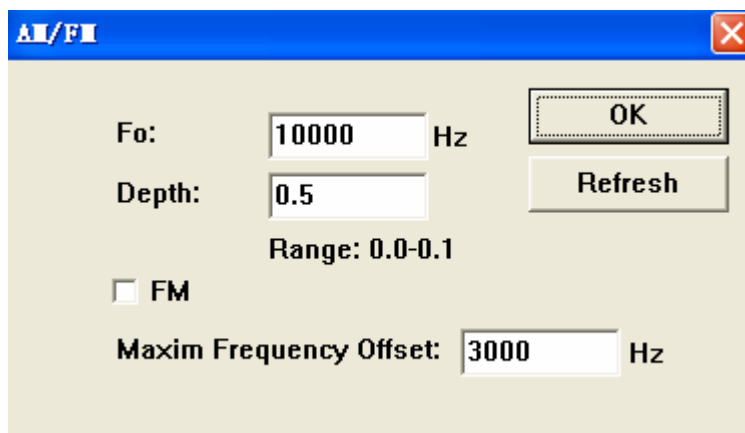
Software

Regular Wave Forms



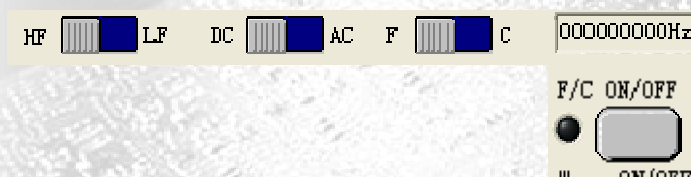
Waveform Parameter Setup

Example “modulation Signal”:



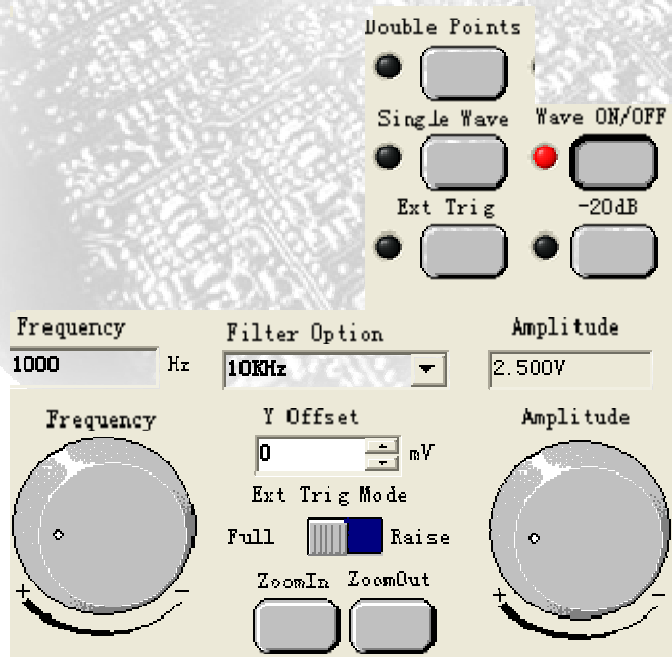
Counter/ Frequency Measurement

Including “High Frequency/ Low Frequency” , “Coupling Mode” “Frequency Measure/ Counter” and the function’s “On/Off”



Waveform Output Control

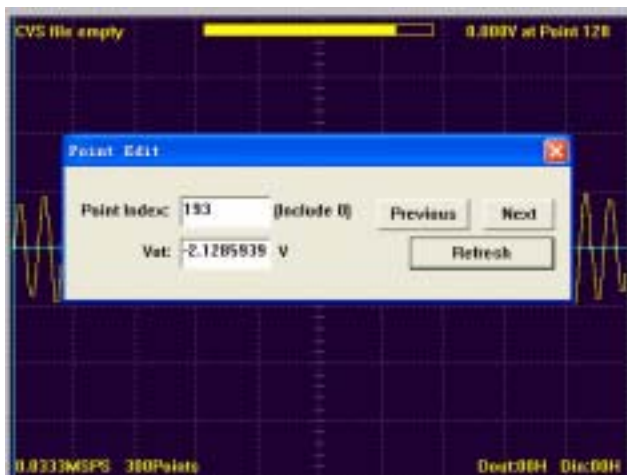
Control the output dot numbers, trigger mode, output amplitude, and limit frequency of the wave filter.



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Arbitrary waveform generator edited point by point or just by drawing with the mouse , with zoom ability



Specification:

Features:

- Signal Frequency Range: 0-5MHz ; Frequency Counter range: 0~2.7GHz
- Outputs: One channel of Arbitrary Waveform ; 8 Bits signal; Synchronized signal
- Inputs: Two channels of Frequency counter; 8 Bits signal; External Trigger
- Arbitrary Waveform edited by mouse
- General waveforms: Sine, Square, Triangle, Saw-tooth, TTL, White Noise, Gauss noise, Exponent, AM, FM
- Settable Parameters: Amplitude, Frequency, Offset
- The data file's format is completely compatible with Tektronix's products and software. It can read directly the data files from and be edited by Tektronix's software.
- DDS technology, High accuracy and resolution, wide software supporting,

Specification:

| | |
|----------------------|--|
| Frequency range | 0.1Hz(DC) ~ 5MHz |
| Frequency Resolution | 0.01Hz |
| DAC Clock | 0~50MHz continuously adjustable in 0.2Hz step |
| Channels | 1CH waveform output |
| Waveform Depth | 256KSa |
| Vertical Resolution | 14 Bits |
| Frequency Stability | < 30ppm |
| Frequency Amplitude | 0~±10V |
| Output Impedance | 50Ω |
| Output Current | 50mA V _{peak} =100mA |
| Low Pass Filter | 5MHz, 1MHz, 100KHz, 10KHz, 1KHz, Programmable |
| DC Accuracy | ±0.1% (FS) |
| AC Accuracy | ±0.2% |
| Harmonic Distortion | -65dBc(1KHz), -53dBc(100KHz) |

| Frequency Counter CH1 | |
|--------------------------|---|
| Range | DC ~25MHz |
| Input Amplitude | $\pm 200\text{mVpp} \sim \pm 25\text{Vpp}$ |
| Coupling Mode | AC, DC Programmable |
| Accuracy | $\pm 1\text{Hz}$ |
| Input Impedance | $> 500\text{K}$ |
| Frequency Counter CH2 | |
| Range | 25MHz ~ 2.7GHz |
| Input Power | $\pm 20\text{dbm}$ |
| Coupling Mode | AC |
| Accuracy | $\pm 256\text{Hz}$ |
| Input Impedance | 50Ω |
| Digital Input and output | |
| Digits | 8 Bits + Synchronized. 1 Bit + External Trigger 1 Bit |
| Level | 3/5V TTL/CMOS |

Order information

| | |
|--------------------|-----|
| Waveform Generator | 1pc |
| USB cable | 1pc |
| English Manual | 1pc |
| Software CD | 1pc |
| BNC-BNC cable | 1pc |