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Siglent SDG1032X

Siglent Technologies SDG1032X Arbitrary Waveform - Function Generator User Manual

Model: SDG1032X

1. INTRODUCTION AND OVERVIEW

The Siglent SDG1032X is an advanced arbitrary waveform and function generator designed for a wide range of electronic testing and measurement applications. This instrument offers dual-channel output, various modulation types, and a harmonics generation mode, making it a versatile tool for engineers and hobbyists.

Key features of the SDG1032X include:

- Dual Channel Output
- Sweep, Burst, Modulation, and Harmonics Generation capabilities
- CH1 - CH2 Waveform Combining
- Built-In Frequency Counter
- Square Wave generation up to 30 MHz



Front view of the Siglent SDG1032X, showcasing its display, control panel, and dual output channels.

2. SETUP

Follow these steps to set up your SDG1032X Function Generator:

1. **Unpacking:** Carefully remove the instrument and all accessories from the packaging. Verify that all components listed in the packing list are present.
2. **Power Connection:** Connect the provided power cord to the instrument's power input on the rear panel, then plug it into a suitable AC power outlet.
3. **Initial Power On:** Press the power button on the front panel. The instrument will perform a self-test and display the startup screen.
4. **Output Connections:** Connect BNC cables from the CH1 and CH2 output ports on the front panel to your desired test circuit or oscilloscope inputs.
5. **USB/LAN Connection (Optional):** For remote control or data transfer, connect a USB cable to the USB Host/Device port or an Ethernet cable to the LAN port on the rear panel.

3. OPERATING INSTRUCTIONS

This section provides an overview of the SDG1032X's operational features.

3.1 Basic Waveform Generation

The SDG1032X can generate standard waveforms such as sine, square, ramp, pulse, and noise. Use the dedicated waveform buttons on the front panel to select the desired waveform. Parameters like frequency, amplitude, and offset can be adjusted using the numeric keypad, rotary knob, and corresponding menu soft keys.



SDG1000Xシリーズ 任意信号/ファンクションジェネレータ

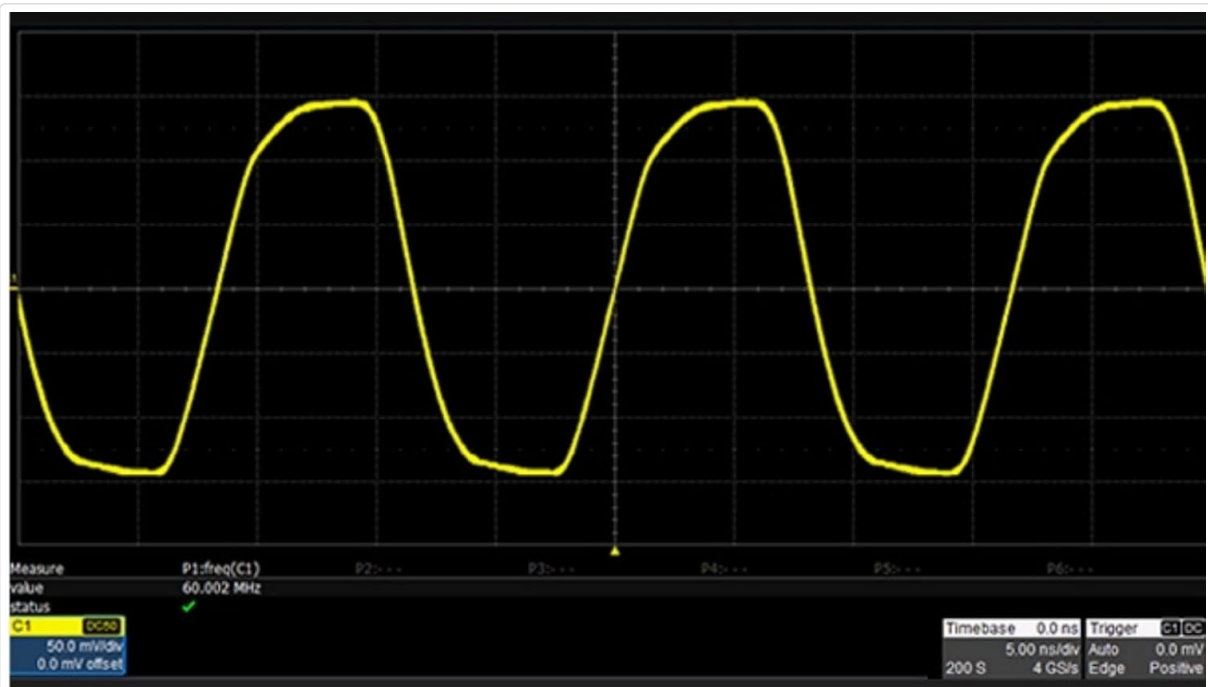
主な特徴

- デュアル出力チャンネル
- 最大60 MHzの方形波および正弦波出力周波数
- 150 MSa/sのサンプリングレート、14 bitの垂直分解能
- TrueArbテクノロジー、2 ~ 16 Kptsのメモリ長（任意波形）
- 微調整可能なパルス幅と立ち上がり/立ち下がり時間設定
- 複雑な信号合成

The SDG1032X display illustrating the settings for a sine wave output, including frequency, amplitude, offset, and phase.

3.2 High-Quality Square Wave Output

The SDG1032X is capable of producing high-performance square wave outputs, even at frequencies up to 30 MHz. It features dedicated circuitry to ensure excellent signal integrity with rise/fall times less than 4.2 ns and low jitter performance.



良質な矩形波

SDG1000Xは、60 MHzのチャンネル帯域幅における制限を超えて、専用回路による高性能な矩形波出力を実現します。

SDG1000Xシリーズの最大帯域幅は60 MHzながら、60 MHzの矩形波出力においても高いパフォーマンスを発揮します。

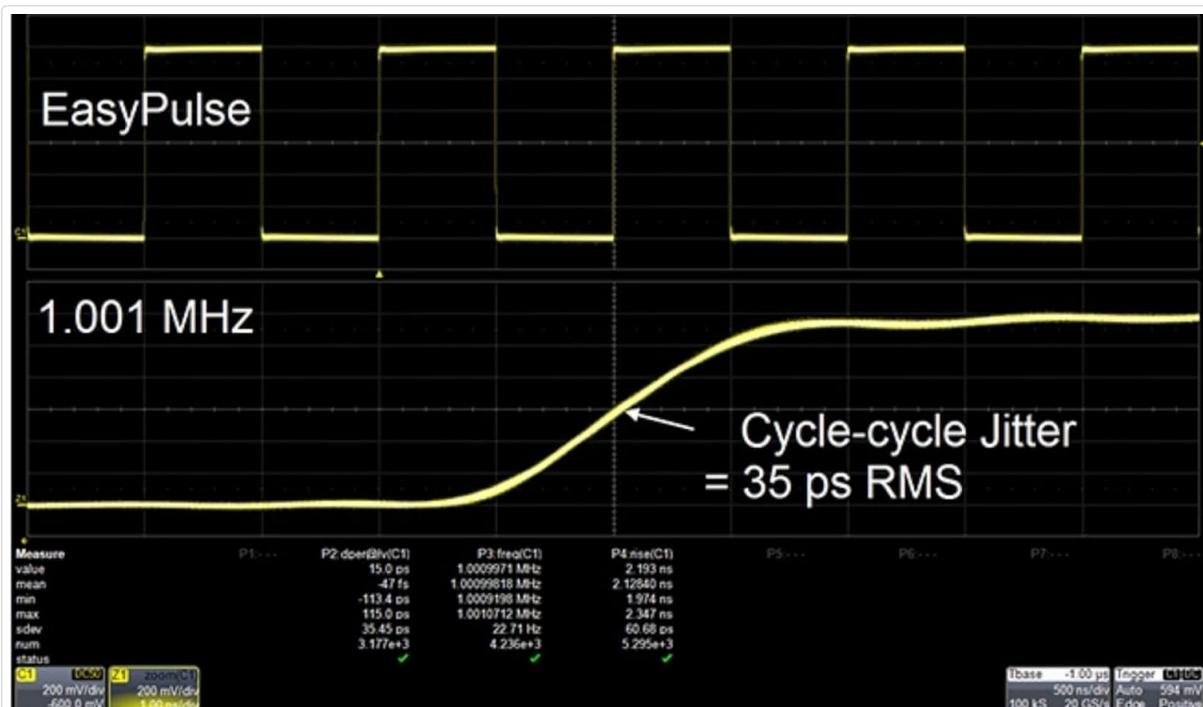
4.2 ns未満の立ち上がり/立ち下がり時間

パルス出力時と同等のジッタ性能を持つ矩形波出力

An oscilloscope screen displaying a precise square wave, demonstrating the SDG1032X's capability to produce high-quality square wave outputs.

3.3 Innovative EasyPulse Technology

EasyPulse technology addresses the jitter issues common in conventional Direct Digital Synthesis (DDS) methods when the sampling rate and output frequency are not integer multiples. This technology ensures low-jitter square wave and pulse outputs with finely adjustable pulse width and rise/fall times down to 1 ns, and a minimum duty cycle of 0.001%.



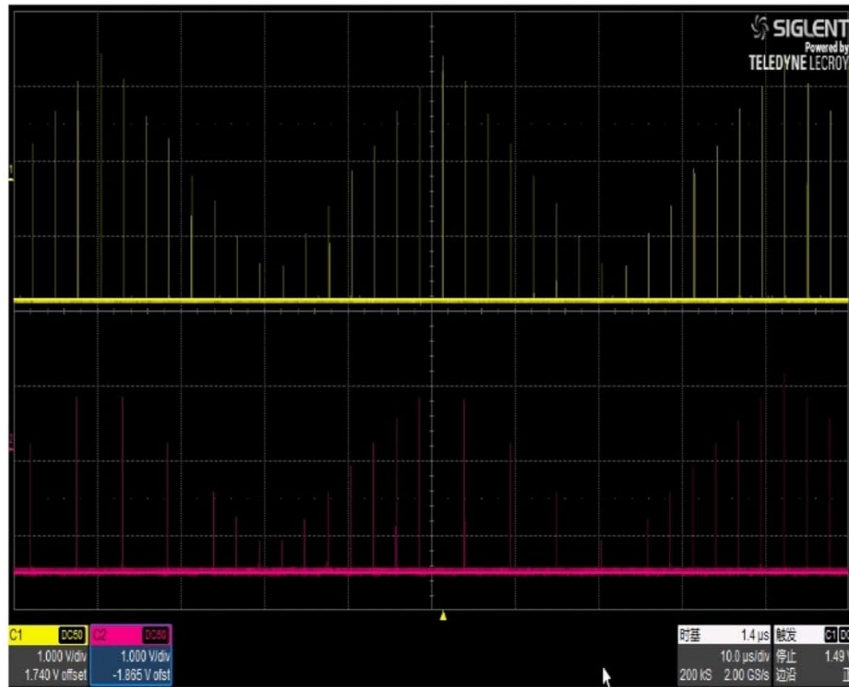
革新的なEasyPulseテクノロジー

従来のDDS方式では、サンプリングレートと出力周波数の関係が整数倍でない場合、1サンプリング周期のジッタが発生しますが、EasyPulseテクノロジーはこの課題を完全に解決することができます。低ジッタの矩形波とパルスの出力に加え、以下のような利点があります。最大150MHzのパルス周波数立ち上がり時間と立ち下がり時間を個別に最小1 nsまで調節可能
パルス幅は最小3.2 nsまで微調節が可能
最小0.001%のデューティ比
低ジッタ

A waveform illustrating the EasyPulse technology, highlighting its ability to generate pulses with extremely low cycle-cycle jitter (35 ps RMS).

3.4 TrueArb Technology for Arbitrary Waveforms

TrueArb technology provides lower jitter and distortion output compared to traditional DDS methods. It allows for point-by-point output of arbitrary waveform data, ensuring high fidelity. The SDG1032X supports 16 kpts memory length for arbitrary waveforms and includes standard PC software, EasyWave, for generating and editing custom waveforms.



TrueArbテクノロジー


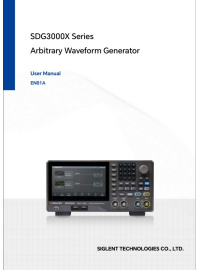

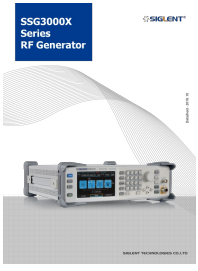


TrueArbテクノロジーは、従来のDDS方式よりも低ジッタかつ低歪みの出力が可能です。また、任意波形をポイントごとに出力する機能も備えています。波形データを漏らすことなく出力できる他、次のような利点があります。20 Mptsのメモリ長（任意波形）により詳細なデータを保持
16 bitの垂直分解能、優れた信号忠実度
標準付属のPCソフト「EasyWave」で、目的に応じた任意波形を生成・出力

An oscilloscope display showing a complex waveform generated using TrueArb technology, emphasizing its high fidelity and detailed data retention capabilities.

3.5 Advanced Signal Generation Capabilities

The SDG1032X is equipped with comprehensive waveform generation functions supporting various modulation methods, sweep, burst output, and signal synthesis. Trigger sources can be set to internal, external, or manual. It supports AM, FM, PM, FSK, ASK, PSK, DSB-AM, and PWM modulation. Both linear and logarithmic sweeps are available, along with

Related Documents - SDG1032X

	<p>SIGLENT SDG3000X Series Arbitrary Waveform Generator Quick Start Guide</p> <p>This quick start guide provides essential information for the SIGLENT SDG3000X Series Arbitrary Waveform Generator, covering safety precautions, panel descriptions, basic operations, and troubleshooting.</p>
	<p>SIGLENT SDG3000X Series Arbitrary Waveform Generator User Manual</p> <p>Comprehensive user manual for the SIGLENT SDG3000X Series Arbitrary Waveform Generator, detailing its features, operation, safety guidelines, and troubleshooting for models like SDG3202X, SDG3162X, and SDG3082X.</p>
	<p>SIGLENT SDS5000X HD/SDS5000L Series Digital Storage Oscilloscope User Manual</p> <p>This comprehensive user manual provides detailed information on the SIGLENT SDS5000X HD and SDS5000L Series Digital Storage Oscilloscopes. It covers essential safety precautions, operation guides, front panel controls, screen display features, remote control capabilities, and in-depth explanations of various measurement and analysis functions, including trigger types, serial bus decoding, and advanced testing capabilities.</p>
	<p>SIGLENT SSG3000X Series RF Generator Specifications and Features</p> <p>Detailed specifications, features, and technical data for the SIGLENT SSG3000X series RF Signal Generators, including models SSG3032X, SSG3021X, SSG3032X-IQE, and SSG3021X-IQE. Covers frequency, level, modulation, and spectral purity characteristics.</p>
	<p>Цифровые осциллографы Siglent серии SDS1000X-E, SDS1000X-U: Инструкция по эксплуатации</p> <p>Подробное руководство пользователя для цифровых осциллографов Siglent серий SDS1000X-E и SDS1000X-U. Охватывает обзор устройства, настройку вертикальной и горизонтальной систем, триггерные функции, меню, интерфейс и многое другое.</p>
	<p>SIGLENT SDS2000X HD Series Digital Storage Oscilloscope Quick Start Guide</p> <p>A comprehensive quick start guide for the SIGLENT SDS2000X HD Series Digital Storage Oscilloscope, providing essential information on setup, operation, user interface, and key features for efficient use.</p>

