



Arbitrary Waveform Generator

AWG 100X

- ISO 7637-2
- ISO 16750-2
- LV 124
- VW 80000
- BMW GS 95003-2
- BMW GS 95024-2-1
- BMW- (Airbag ECU)
- BMW 600 13.0(Part 1)
- Chrysler CS-11809
- Chrysler PF-9326
- Cummins 14269(982022-026)
- DaimlerChrysler DC-10615
- Ford ES-XW7T-1A278-AB
- Ford ES-XW7T-1A278-AC
- Ford WDR 00.00EA
- GMW 3172
- Hyundai/Kia ES 95400-10, Rev. D
- DO 160 Section 16
- Case New Holland ENS0310
- Audi (Reference vehicles)
- Fiat 9090110
- DaimlerChrysler PF-10541
- Ford EMC-CS-2009.1

Features

- > Complies with tests specified in ISO 16750 and most automotive manufacturer standards
- > Each output channel independently provides high-resolution and high-accuracy waveform generation
- > Software-controlled (Ethernet), enabling simple and realistic reproduction of various transient phenomena
- > The waveform synchronization deviation between channels less than 1 μ s
- > High-performance processing unit enables distortion-free waveform transitions at the μ s level
- > Waveform data acquired from oscilloscopes (CSV format) can also be reproduced with high accuracy
- > Flexible trigger timing configuration

Introduction

The AWG 100X Arbitrary Waveform Generator complies with ISO 16750, ISO 7637-2 and certain automotive manufacturer standards.

Waveforms for automotive testing are becoming increasingly complex. While tests for individual phenomena as specified in standards are still conducted, greater focus is placed on vehicles and components under real operating conditions. Conventional waveform generators fail to meet such requirements, especially when multiple test waveforms need to be superimposed in a single test. In this case, the AWG 100X is the optimal choice.

The Multi-Channel Arbitrary Waveform Generator supports 1 to 4 selectable output channels and can generate various arbitrary waveforms, including DC, ramp, sine, frequency sweep, exponential, and irregular/custom waveforms. Each channel provides precise synchronization, flexible trigger configuration, and supports loading waveform data stored in oscilloscopes for high-accuracy waveform reproduction.

The Arbitrary Waveform Generation Software enables users to quickly and easily create complex voltage/time-sweep waveforms. It features a comprehensive library of automotive test standards, supports flexible test sequence scheduling, and allows one-click execution of complete automated test procedures.

Application Areas



Technical Parameters

Number of Channels	2 or 4 channels optional
Inter-channel Synchronization Accuracy	< 1 μ s
Waveform Types	DC wave, ramp wave, triangular wave, sine wave, square wave, swept-frequency wave, exponential wave, waveform data imported from oscilloscopes, user-defined waveforms and irregular arbitrary waveforms
Adjustable Waveform Parameters	Amplitude, duration, frequency, DC offset, rectification, duty cycle, phase angle, trigger mode
Amplitude and Offset Variation	Static, linear
Start/End Phase Control	0 ~ 360°, adjustable in 1° steps
Rectification Mode	Programmable: none, positive, and negative
Frequency Range per Channel	Calculation mode: Max. 500 kHz (for sine, square, triangular and other waveforms including sweep, amplitude, offset and phase adjustment) Direct memory mode: DC to 500 kHz (for arbitrary waveforms)
Waveform Output Rate	25 MSPS per channel
Frequency Resolution	0.01 Hz
Rise/Fall Time	$\leq$ 100 ns @ 20 V _{pp}
Output Amplitude	0 ~ $\pm$ 10.00 V
Load Capacity	$\geq$ 1 k Ω
Short-circuit Output Protection	Yes
Voltage Setting Resolution	1 mV
Output Linearity	DC: $\pm$ (0.2% + 10 mV) 0.01 ~ 100 kHz: $\pm$ 1% 100 ~ 350 kHz: $\pm$ 2% 350 ~ 500 kHz: $\pm$ 5%
Importable File Format	CSV
Max. Points of Imported Waveform	16 MB
Waveform Data Storage	Dynamic cache: 1 GB DDR3 Non-volatile memory: 32 GB NAND FLASH
Waveform Segments	Up to 1,000 segments per waveform, each segment supports multiple waveform types
Segment Duration	10 μ s to 299 hours
Inter-segment Delay	None
Test Duration	1 ms to 9,999 hours, 1 ~ 9,999 cycles
Trigger Output for Oscilloscope	1 BNC connector, 0 ~ 5 V Trigger points can be set at any position via the waveform generation software to monitor output waveforms using the oscilloscope's external trigger function.
External Control Input	1 BNC connector, 0 ~ 5 V input. Supports external control of 1 to 4 channels.
PC Interface	Ethernet

General Parameters

Working Power	AC 90 V ~ 260 V, 50/60 Hz, 100 VA
Weight	Approx. 10 kg
Dimensions	4U rack
Ambient Temperature	15°C ~ 35°C

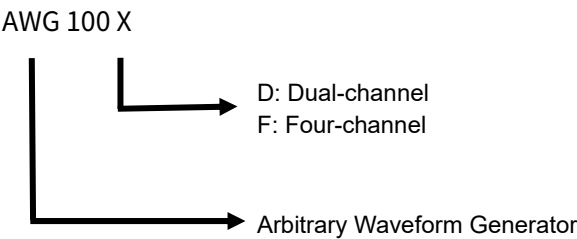
Standard Accessories

Main Unit, Power Cord, User Manual, Test Cables

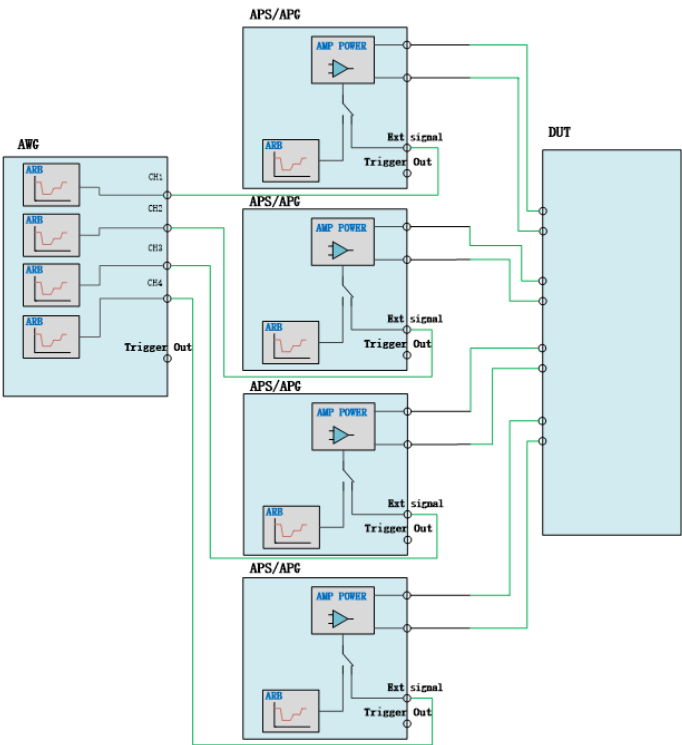
Optional Accessories

1	AutoLab Software	Users can edit various waveforms for segments and test points via the self-developed AutoLab software. The AWG 100 can work in tandem with APS and APG series power supply and voltage disturbance simulators.	
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Naming Rules



Test Connection Diagram



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