ARB RIDER AWG-4000 ARBITRARY WAVEFORM GENERATOR

2, 4 and 8 Channel Arbitrary Waveform Generator

The ARB Rider AWG-4000 series is a powerful set of 2, 4 and 8 channel Arbitrary Function Generators (AFG) and Arbitrary Waveform Generators (AWG) from Active Technologies. AWG-4000 offers up to 24Vpp output range and up to 1024 Msample memory depth, making this family the ideal choice for Automotive, Aerospace & Defense, BigPhysics and Semiconductor Test applications.

Up to 8 analog channels per unit and up to 32 digital lines (TTL or LVDS standards) allows the user to create a mixed signal generation setup to generate analog and digital stimuli. AWG-4000 is the ideal choice as multi channel Arbitrary Waveform Generator.

MODEL	ANALOG CH	DIGITAL CH	SAMPLE RATE	RECORD LENGTH	VERTICAL RES.	MAX FREQ.	MAXIMUM OUTPUT VOLTAGE	OUTPUT VOLTAGE WINDOW
AWG-4012	2	8 (opt.)	1 Sa/s to 1.2 GSa/s	2 to 1024 Mpts	16 bits	300 MHz	6Vpp – 12Vpp (Opt.)	24Vpp
AWG-4014	4	8 or 16 (opt.)	1 Sa/s to 1.2 GSa/s	2 to 1024 Mpts	16 bits	300 MHz	6Vpp – 12Vpp (Opt.)	24Vpp
AWG-4018	8	8, 16 or 32 (opt.)	1 Sa/s to 1.2 GSa/s	2 to 1024 Mpts	16 bits	300 MHz	6Vpp – 12Vpp (Opt.)	24Vpp

AWG-4018: 1.2 GS/S | 16 BITS | 8 CHANNELS ARBITRARY WAVEFORM GENERATOR

4-I
N-1 Instrument

The AWG-4000 Series instruments are multifunctional signal generators that combine four functions in one instrument, including Function Generator, Arbitrary Waveform Generator, Digital Pattern Generator and Serial Data Pattern Generator.

These four-different functionalities expand the HW flexibility adopting two different technologies: Improved DDS in AFG mode and variable clock, true-arbitrary technology in AWG mode.

The AFG mode allows the user to change glitch free on-the-fly all the parameters preserving the waveform shape and to create/generate the waveform in a glace.

The AWG mode lets the user create complex wavefevorm of analog and digital patterns, insert them in a sequence, apply loops, jumps and conditional branches.

The Serial Data Pattern mode is designed to generate a stream of binary information. With up to 8 channels of data stream, built-in PRBS sequences, modulation features, transition shaping, and the flexibility of a powerful analog front-end, the SPG is the perfect tool for the most challenging applications.

Highlights

Up to 1024 Mpoints of waveform memory on each channel

16384 sequencer entries

Analog and Digital signals fully synchronized

Serial Data Patterns Generation
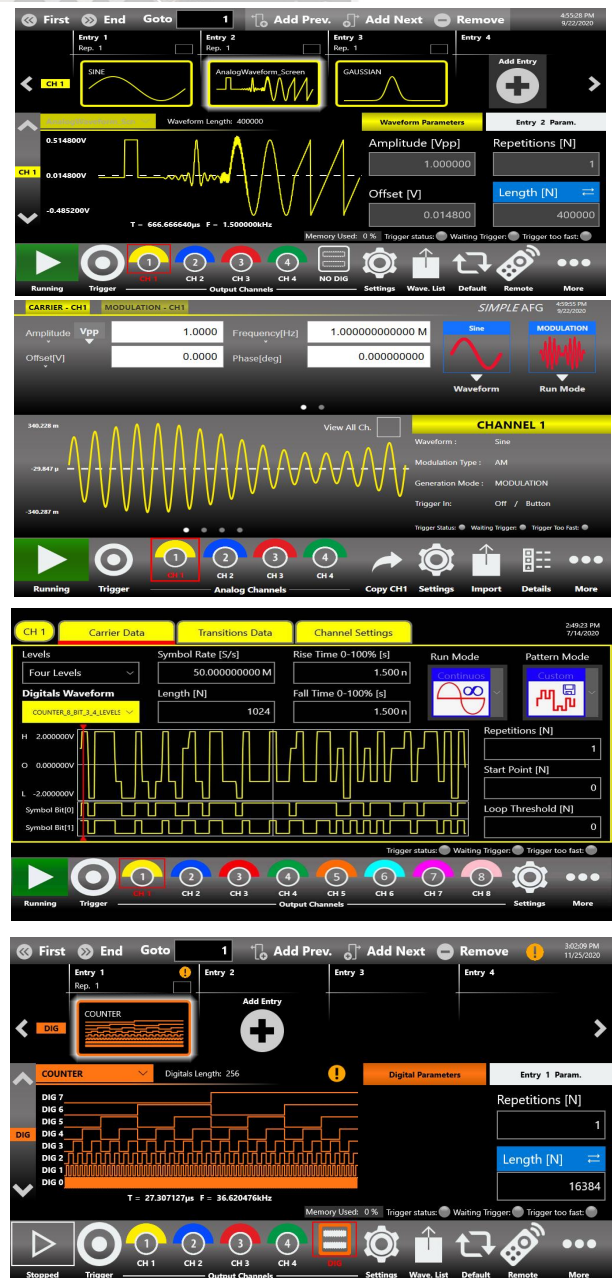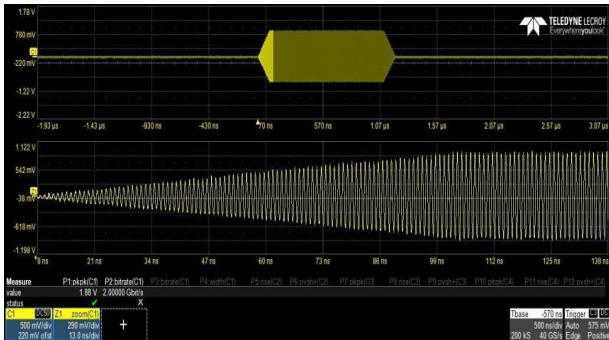
Aerospace & Defense

Electronics warfare signals driven by Radar or Sonar systems perfectly match with AWG-4000 Series generators. The AWG-4000 Series AWGs can be used on digital modulation systems for Radio Applications or others I/Q signal modulation. Moreover pulses can be easily generated for applications such as Pulse Electron Beam or X Ray Sources, Flash X-ray Radiography, Lighting pulse simulators, high Power Microwave modulators.

Highlights

- Generate Radar test signals with excellent spurious performance
- Create Electronic Warfare complex scenarios with up to 16384 sequencer entries and Advanced Sequencer conditional/unconditional jumps.
- Up to 12Vpp into 50 Ohm Pulse Amplitude with ± 2.5V hardware offset
- Fast Rise Time Pulses: up to 900 ps rise/fall time

Automotive, IoT and Ind. 4.0

Today's cars are including lots of highly sophisticated electronic control units (ECU) with very sensitive electronic components. The 16-bits vertical resolution combined with High-Sampling Rate and 12Vpp (24 Vpp on High Impedance Load) output amplitude range, make the AWG-4000 Series instruments indispensable tools for successfully addressing the new testing challenges in automotive.

Wireless technologies are driving the next industrial revolution, taking productivity and efficiency to new levels. Manufacturing is becoming more intelligent, flexible and dynamic. As result, wireless connectivity is becoming even more business and mission critical, leading to very strict requirements with respect to reliability, latency and security.

Following those scenarios, the AWG-4000 Series Waveform Generators gives you the possibility to emulate complex RF I/Q modulation for simulation and Test on wireless devices or working on Internet of things of industry 4.0 applications.

Highlights

- CAN, CAN-FD, LIN, Flexray, SENT emulation and troubleshooting
- 100BASE-T1, 1000BASE-T1, BroadR-Reach emulation and immunity from interference signal and noise
- Power Integrity testing of electric and electronic components for use in motor vehicles at low voltage
- Sensors signals generation: emulation of ideal signals or generation of real world signals after acquisition with an High Definition Oscilloscope .
- MOSFET gate drive amplitude signal emulation for MOSFET characterization and optimization
- Electrical standards emulation up to 24 V
- MEMS sensor testing : up to 24 V – 2.5ns rise and fall time

Semiconductors Test and Research Centers
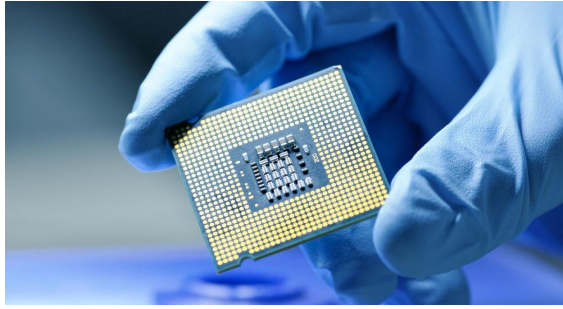
Researches   require to emulate signals adding amplitude and timing variation imperfections in an accurate, detailed and repeatable controlled manner. Physics, electronics, chemistry, mechanics and other disciplines can benefit from the super intuitive user interface and from the hardware flexibility.
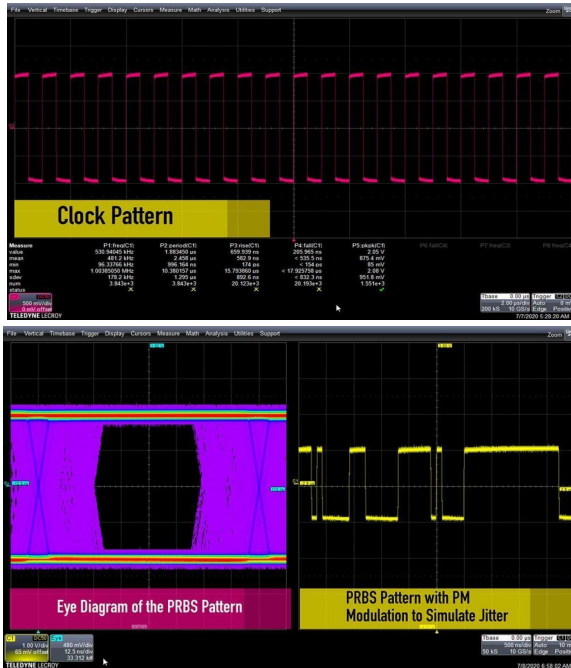
The most challenging setup for your tests can be addressed in few minutes.

Today's IC, components, electronic circuits and sensors are required to be highly reliable extending the operating range in many variables.

Emulation of complex signals generated with inclusion of noise or distortions may became an excellent way to provide Compliance Components Test to help semiconductors engineers.

Highlights

- Clock generation for component overclock behavior and operating range limit and stress test
- Power up sequences of IC using the low impedance feature (5 Ω output impedance)
- Emulation of signal sources adding noise and known modulation distortion
- Quantum Computing
  - Modulating and driving laser diode with detailed waveform generation
  - Generation/playback of real-world signals previously acquired using an Oscilloscope and imported into the AWG-4000 Series generator
  - Double pulse test setup in few seconds to measure switching parameters and evaluate the dynamic behaviors of MOSFET and IGBT power devices
  - Emulation of long PRBS sequences with the SPG option
  - Generation of multi-level and multi-edge pulses long waveforms with the SPG option

MULTI-INSTRUMENT SYNCHRONIZATION

You can synchronize up to 4 units to build a system made of 32 analog channels and 128 digital channels fully synchronized and integrated with the True-Arb software.

Highlights

- Synchronize up to 4 units: 32 Analog channels and 128 Digital channels
- Easy to use
Multi-Instrument control through True-Arb software
- Address modern applications that require an high number of channels
- Quantum Computing Systems with Multiple Qubits