



Active Technologies

Product Catalog 2025

Ready for the **Next Generation**



RIDER 
Series

Discover the New Product Family

ARB RIDER 7000 Series



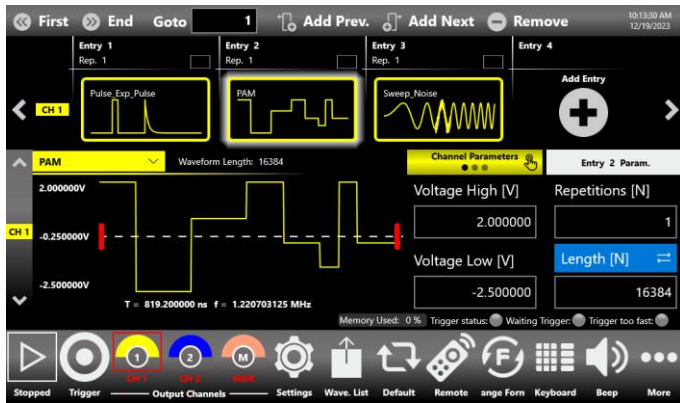
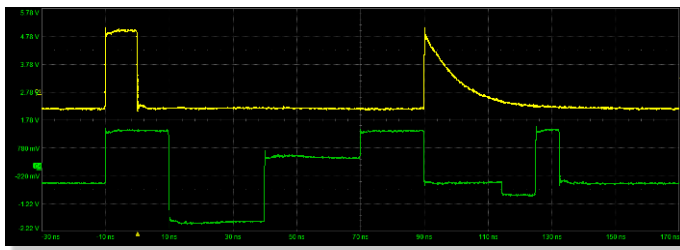
World's Fastest 14 Bit Arbitrary Waveform Generator

The ARB Rider AWG-7000 is the **World's Fastest 14 bit** Arbitrary Waveform Generator: **20 GS/s** real time update rate, **14 bit** vertical resolution and **5 Vpp** of output amplitude voltage.

10 GHz maximum output frequency, up to **5 Vpp** output range and up to **9 GSamples** memory depth, make the AWG-7000 the ideal choice for Physics Experiments, Optics & Photonics, Quantum Key Distribution (QKD), Quantum sensing/communication, RF/Wireless, Aerospace & Defense applications.

Key Features

- 20 GS/s Real Time Sampling Rate
- 14 Bit Vertical Resolution
- 5 Vpp into 50 Ω with 8 GHz of Analog Bandwidth
- Minimum Edge Time < 50 ps
- 10 GHz Maximum Output Frequency
- Up to 9 GSamples of Waveform Memory Depth
- Up to 4 Analog Channels (Single Ended or Differential) and 32 Digital Channels
- 6.5 Gbps Multi-Level Serial Data Pattern Generator
- Multi Instrument Synchronization: up to 16 Analog Channels and 128 Digital Channels
- Four Operating Modes: AFG, AWG, DPG and SPG



Quantum, Optics & Photonics, Semiconductors, RF-Wireless

The AWG-7000 Series instrument can create virtually any kind of signal: analog or digital, ideal or distorted, standard or custom.

- 5 Vpp into 50 Ω with 8 GHz of Analog Bandwidth
- 2 or 4 Single Ended or Differential Channels
- Built-in sequencer with 16384 entries, conditional/unconditional/dynamic jump features, up to 4 independent Trigger Inputs, up to 4 Marker outputs

Pulses for All Your Needs

Generate easily a complex pulse train, a series of radar pulses, drive electro and acousto-optic modulators, pulsed RF signals with impairments, Gaussian pulses, multi-level pulses, PAM and PRBS signals, pulses for Advanced Research and Quantum computing.

- Up to 5 Vpp into 50 Ω Pulse Amplitude with ±2.5 V hardware offset
- Minimum Rise and Fall Time: 50 ps
- Minimum Pulse Width: 100 ps
- Shape easily your Pulse Transitions

Applications

Quantum Communication (QKD) & Quantum Sensing, Optics & Photonics, High-Speed Serial Semiconductor tests, Big Physics and Advanced Research, Aerospace & Defense, RF/Wireless.

Models	Analog Channels	Digital Channels	Max. Sample Rate	Analog BW	Max. Record Length	Vertical Res.	Max. Output Frequency	Max. Output Voltage (50Ω Load)
AWG-7202(D)	2 S.E./Diff.	N.A.	20GS/s	8GHz	9GS	14 bit	10GHz	5Vpp S.E. 2Vpp Diff.
AWG-7204(D)	4 S.E./Diff.	8/16/32			512kS/Ch			
AWG-7204(D)-S	4 S.E./Diff.	N.A.	10GS/s	4GHz	4.5GS/Ch	14 bit	5GHz	5Vpp S.E. 2Vpp Diff.
AWG-7102(D)	2 S.E./Diff.	N.A.						
AWG-7104(D)	4 S.E./Diff.	8/16/32						

ARB RIDER 5000 Series

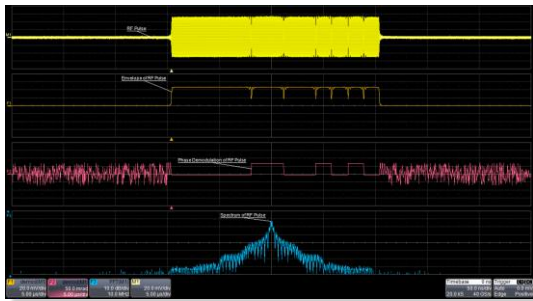
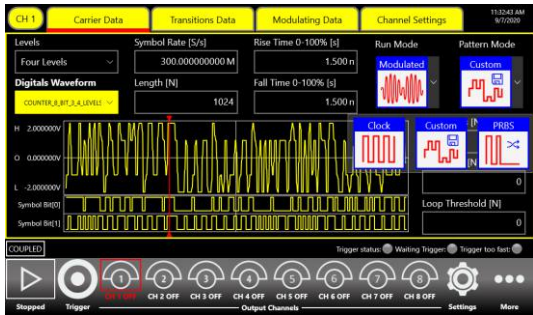


The **ARB Rider AWG-5000 Series** delivers an unmatched hardware performance, setting a new record as the fastest 16-bit AWG on the market. With a sampling rate of 6.16 GS/s and an output voltage of 5 Vpp, the AWG-5000 has one of the highest amplitude*bandwidth factors (5 Vpp*2.4 GHz) in the world.

The **ARB Rider 5000** provides up to 8 analog channels, 32 digital channels and 4 operating modes: Arbitrary Function Generator (**AFG**), Arbitrary Waveform Generator (**AWG**), Digital Pattern Generator (**DPG**) and Serial Pattern Generator (**SPG**) in 3U form factor.

Key Features

- Up to 6.16 GS/s (12.32 GS/s in RF mode)
- 16 bit Vertical Resolution
- Up to 5 Vpp into 50 Ω with 2.4 GHz Analog Bandwidth
- Minimum Edge Time ≤ 110 ps
- Up to 4 GSamples per channel
- Up to 8 Analog (S.E. or Diff.) and 32 Digital Channels
- 1.5 Gbps Multi-Level Serial data Pattern Generator
- Multi Instrument Synchronization: up to 32 Analog and 128 Digital Channels
- Four Operating Modes: AFG, AWG, DPG and SPG



Multiple Operating Modes

Three extremely powerful and intuitive User Interfaces designed for the 7" touchscreen provide advanced AFG, AWG, DPG and SPG functionalities.

Designers can create complex waveforms, serial data patterns or standard waveforms and modulations with just few screen touches.

Highest Channel Density

Up to 4 instruments can be connected together with multi-unit Synchronization to reach up to 32 Analog and 128 Digital Channels.

Applications

Optics & Photonics, Quantum, Semiconductor tests, Big Physics and Advanced Research, Radar / Lidar design and testing, RF/Wireless.

Models	Analog Channels	Digital Channels	Max. Sample Rate	Analog Bandwidth	Max. Record Length	Vertical Resolution	Max. Output Frequency	Max. Output Voltage (50Ω Load)
AWG-5062	2 S.E.	8	6.16GS/s	2.4GHz	4GS/Ch	16 bit	6GHz	5Vpp
AWG-5062D	2 Diff.							1.5Vpp
AWG-5064	4 S.E.	8/16	6.16GS/s	2.4GHz	4GS/Ch	16 bit	6GHz	5Vpp
AWG-5064D	4 Diff.							1.5Vpp
AWG-5068	8 S.E.	8/16/32	6.16GS/s	2.4GHz	4GS/Ch	16 bit	6GHz	5Vpp
AWG-5068D	8 Diff.							1.5Vpp
AWG-5032D	2 Diff.	8	3GS/s	1.2GHz	4GS/Ch	16 bit	1.5GHz	1.5Vpp
AWG-5034D	4 Diff.	8/16	3GS/s	1.2GHz	4GS/Ch	16 bit	1.5GHz	1.5Vpp
AWG-5038D	8 Diff.	8/16/32	3GS/s	1.2GHz	4GS/Ch	16 bit	1.5GHz	1.5Vpp

ARB RIDER 4000 Series

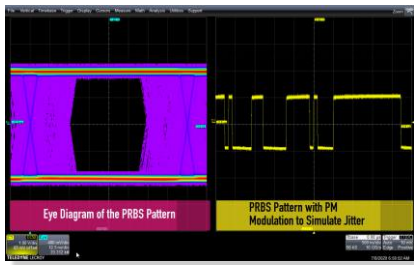


The **ARB Rider 4000 Series** offers premium signal integrity with the easiest to use touch screen display interface. The Generation of complex signals requires only a few screen touches.

Arb Rider 4000 Series is also an affordable waveform generation platform that helps stretching the specifications of your projects to the limit, offering not just analog outputs but also digital channels.

Key Features

- Up to 1.2 GS/s, 16 bit Vertical Resolution
- Minimum Edge Time ≤ 1.1 ns
- Up to 24 Vpp Output Range
- Up to 1 GSamples per Channel
- Up to 32 Digital Channels synchronous with Analog Generation
- 300Mbps Multi-Level Serial data Pattern Generator
- Multi Instrument Synchronization: up to 32 analog channels
- Four Operating Modes: AFG, AWG, DPG and SPG



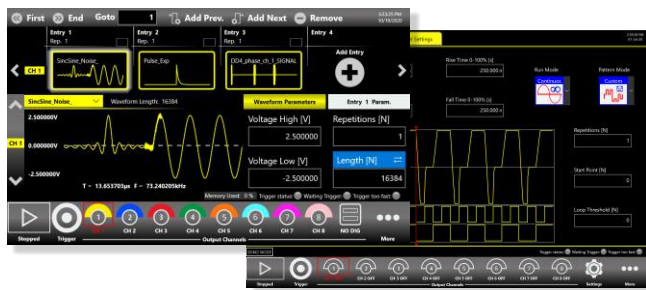
Best In Class Amplitude vs. Frequency

The ARB Rider 4000 Series can reach 12 Vpp into 50 Ω with 480 MHz of Analog Bandwidth.

Multiple Operating Modes

Three extremely powerful and intuitive User Interfaces designed for the 7" touchscreen provide advanced AFG, AWG, DPG and SPG functionalities.

Designers can create complex waveform, serial data patterns or standard waveforms and modulations with just few screen touches.



Highest Channel Density

Up to 4 instruments can be connected together with multi-unit Synchronization.



Applications

University and Research, Automotive, Big Physics, Semiconductor and Power devices test, Pulse Pattern Generator replacement.

Models	Analog Channels	Digital Channels	Max. Sample Rate	Analog Bandwidth	Max. Record Length	Vertical Resolution	Max. Sine Wave Frequency	Max. Output Voltage
AWG-4012	2	8	1.2GS/s	480MHz	1GS/Ch	16 bit	400MHz	12Vpp
AWG-4014	4	8/16						
AWG-4018	8	8/16/32						

ARB RIDER 2000 Series



The **AWG Rides 2000 Series** gives top class AWG functionalities like the advanced sequencer, wide memory and the digital outputs in a compact and cost-effective instrument.

It provides 2 or 4 analog channels and integrates three operating modes in the same instrument: Arbitrary Function Generator (**AFG**), Arbitrary Waveform Generator (**AWG**) and Digital Pattern Generator (**DPG**).

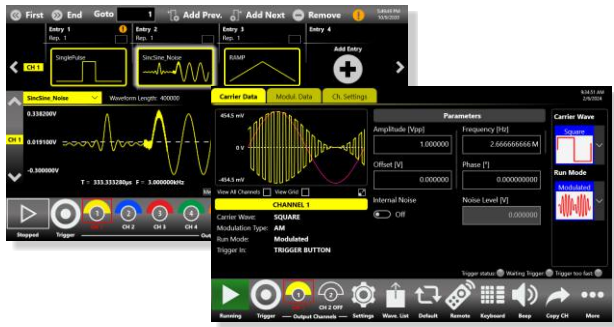
Key Features

- 2 or 4 Analog Channels
- 16 bit Vertical Resolution
- 600 MS/s (variable clock) or 1.2 GS/s (with x2 interpolation)
- Minimum Edge Time ≤ 2.2 ns
- Up to 24 Vpp Output Range
- Up to 512 Mpts per channel
- 8 Digital Channels synchronous with Analog Generation
- Three Operating Modes: AFG, AWG and DPG



Best Analog Performance

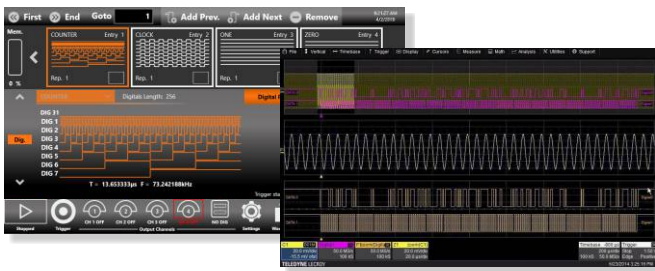
- 12 Vpp into 50 Ω
- 2 or 4 Analog Channels
- 16 bit Resolution and 240 MHz Analog Bandwidth



Designed for Touch UI

Two extremely powerful and intuitive User Interfaces designed for the 7" touchscreen provide advanced AFG and AWG functionalities.

Designer can create complex waveform and real scenarios with the advanced sequencer as well as standard waveforms and modulations with just few screen touches.



Analog + Digital Mixed Mode

With up to 4 analog channels and 8 digital channels it is possible to generate full featured mixed signal stimuli to cover the most demanding testing needs.

Applications

Automotive, University and Research, Low Level Signals Emulation, Medical, Semiconductors test.

Models	Analog Channels	Digital Channels	Max. Sample Rate	Analog Bandwidth	Max. Record Length	Vertical Resolution	Max. Sine Wave Frequency	Max. Output Voltage
AWG-2182	2	8	600MS/s	240MHz	512MS/Ch	16 bit	180MHz	12Vpp
AWG-2184	4			150MHz			100MHz	
AWG-2104	4							

PULSE RIDER 1000 Series

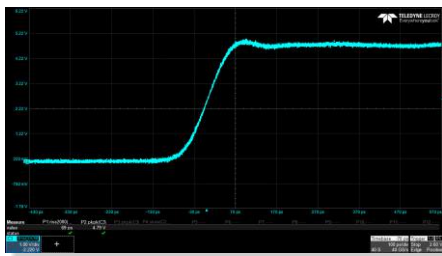


The **Pulse Rider Series** offers premium signal integrity with the easiest to use touch screen display interface (**SimpleRider™**).

Its innovative hardware architecture provides the possibility to generate multiple pulse sequences, such as **double, triple or quad pulses**, with fully independent timing parameters.

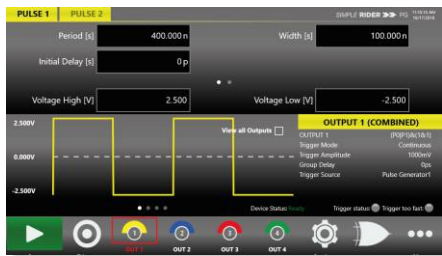
Key Features

- 70 ps Edge Time
- 5 Vpp Output Voltage Range
- Minimum Pulse Width less than 300ps
- Dual and Quad Channels Systems
- SimpleRider™ touch User Interface



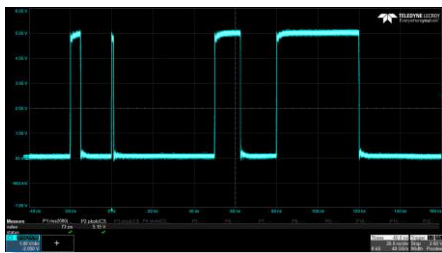
Rider Fast Edge

First to market low cost Analog Edge Converter with the ability to reach less than 70 ps edge (20-80%) at 5 V into 50 Ω, with fully adjustable Output Voltage and Baseline Offset.



SimpleRider UI

SimpleRider UI is designed for touch to drive simplicity in operating with a pulse generator.



Multiple Pulse Mode

Double, triple or quad pulses, with fully independent timing parameters and up to 800 MHz output frequency.

Applications

Big Physics & Advanced Research, Semiconductor tests, Optics & Photonics, Radar design and testing.

Model	Output Channels	Amplitude pk-pk	Baseline Offset	Rise/Fall Time (20-80%) typ.	Maximum Frequency	Period Range and Resolution	Width Range and Resolution
PG-1072	2	10mVpp to 5Vpp Adj.	±2.5V Adj.	<70ps fixed	800MHz (quad pulse mode)	8ns to 8s (10ps res.)	300ps to (period-300ps) (10ps res.)
PG-1074	4	10mVpp to 5Vpp Adj.	±2.5V Adj.	<70ps fixed	800MHz (quad pulse mode)	8ns to 8s (10ps res.)	300ps to (period-300ps) (10ps res.)

PULSE RIDER 1500 Series

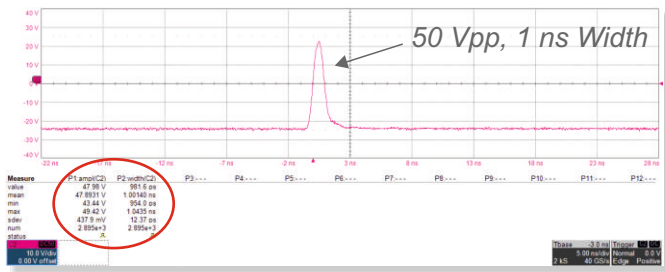


In the **Pulse Rider 1500 Series** generators, the output voltage can be adjusted up to 50 Vpp in a window of ± 25 V with 400 ps edge rate (based on RiderEdge™ technology).

Its innovative hardware architecture provides the possibility to generate multiple pulse sequences, such as **double, triple or quad pulses**, with fully independent timing parameters.

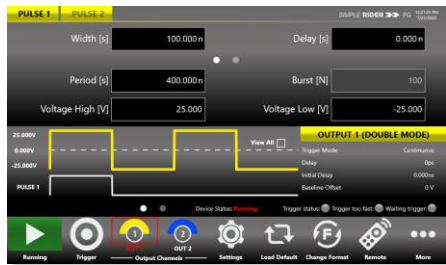
Key Features

- 400 ps Edge Time
- Up to 50 Vpp into 50 Ω
- Minimum Pulse Width less than 1ns
- Single and Double Channel System
- SimpleRider™ touch User Interface



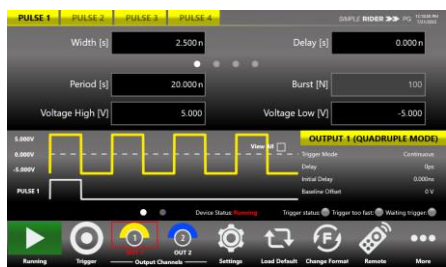
50Vpp Rider Fast Edge™

First to market low cost Analog Edge Converter with the ability to reach less than 400 ps edge (20-80%) and up to 50 Vpp into 50 Ω with fully adjustable Output Voltage and Baseline Offset.



SimpleRider UI

All important instrument controls and settings are always one touch away: swipe gesture to change the channel, pulse selection and have access to its main parameters, generate multiple pulses easily, use the touch-friendly virtual numeric keyboard to change parameter values on the fly



Applications

Semiconductor characterization, Optics & Photonics, UWB and Ground Penetrating Radar design and testing, Advanced Research & Lidar design.

Model	Output Channels	Amplitude pk-pk	Baseline Offset	Rise/Fall Time (20-80%) typ.	Maximum Frequency	Period Range and Resolution	Width Range and Resolution
PG-1501	1	100mVpp to 50Vpp Adj.	-25V to +25V (12.5V res.)	<400ps (up to 50Vpp)	400MHz (quad pulse mode)	5ns to 8s (10ps res.)	1ns to (period-1ns) (10ps res.)
PG-1502	2						

About Active Technologies

Active Technologies is an Italian company expert in Test & Measurement equipments.

The company mission is to deliver the best signal stimulus solutions as fast pulse generators, arbitrary waveform generators and data pattern generators.

The research group works in a close cooperation with physics and academic research centers, semiconductor and automotive industries, in order to deliver the state of the art signal source solutions for testing.



Contact Information

Active Technologies S.r.l.

Via Bela Bartok 29/B | 44124 Ferrara | Italy

Phone +39 0532 177 21 45

Web www.activetechnologies.it

General Informations info@activetechnologies.it

Sales Department sales@activetechnologies.it

Technical Support support@activetechnologies.it

