



# Active Technologies Product Catalog

## Reinventing the Signal Generation



### RIDER Series

Explore the Product Family



Active Technologies

# 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**).

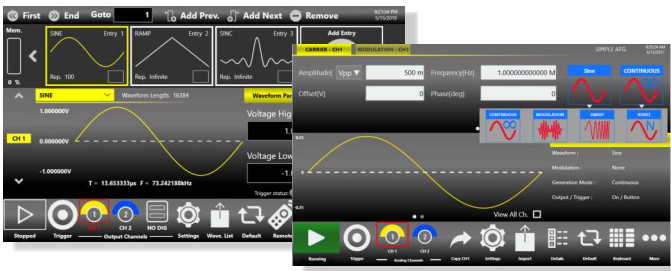
## Key Features

- 2 or 4 Analog Channels
- 16 bit Vertical Resolution
- 600MS/s (variable clock) or 1.2GS/s (with x2 interpolation)
- Minimum Edge Time  $\leq 2.2$ ns
- Up to 24Vpp Output Range
- 256Mpts per channel
- 8 Digital Channels synchronous with Analog Generation
- Three Operating Modes: AFG, AWG and DPG



## Best Analog Performance

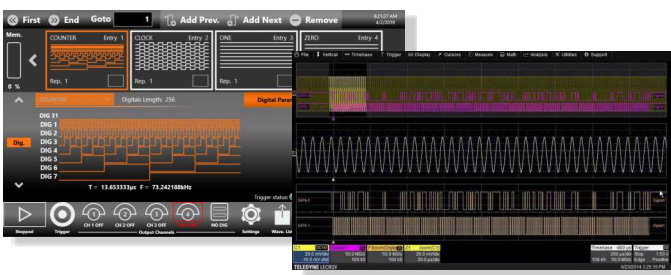
- 12Vpp into 50Ω
- 2 or 4 Analog Channels
- 16 bit Resolution and 180MHz Bandwidth



## 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.

| Models  | Analog Channels | Digital Channels | Max. Sample Rate | Analog Bandwidth | Max. Record Length | Vertical Resolution | Max. Output Frequency | Max. Output Voltage |
|---------|-----------------|------------------|------------------|------------------|--------------------|---------------------|-----------------------|---------------------|
| AWG2182 | 2               | 8                | 1.2GS/s          | 160MHz           | 256MS/Ch           | 16 bit              | 180MHz                | 12Vpp               |
| AWG2184 | 4               |                  |                  |                  |                    |                     |                       |                     |

# ARB RIDER 4000 Series



The **ARB Rider 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** 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.

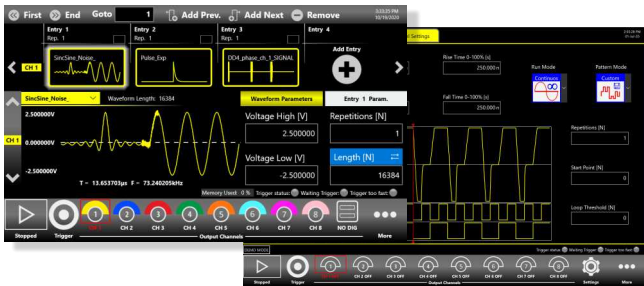
## Key Features

- Up to 1.2GS/s, 16 bit Vertical Resolution
- Minimum Edge Time  $\leq 1.1$ ns
- Up to 24Vpp Output Range
- Up to 1Gpts 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 12Vpp into 50Ω with more than 300MHz 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.

| Models  | Analog Channels | Digital Channels | Max. Sample Rate | Analog Bandwidth | Max. Record Length | Vertical Resolution | Max. Output Frequency | Max. Output Voltage |
|---------|-----------------|------------------|------------------|------------------|--------------------|---------------------|-----------------------|---------------------|
| AWG4012 | 2               | 8                | 1.2GS/s          | >318MHz          | 1GS/Ch             | 16 bit              | 300MHz                | 12Vpp               |
| AWG4014 | 4               | 8/16             |                  |                  |                    |                     |                       |                     |
| AWG4018 | 8               | 8/16/32          |                  |                  |                    |                     |                       |                     |

## ARB RIDER 5000 Series

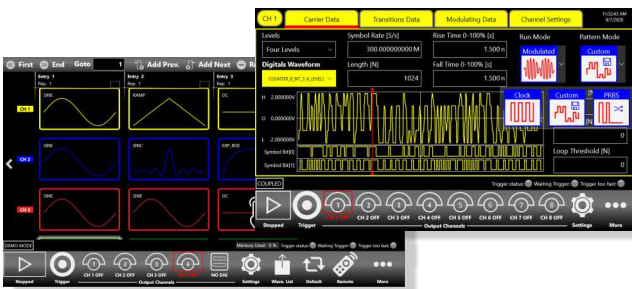
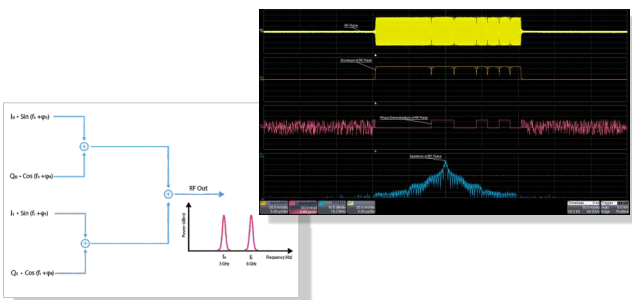


The **ARB Rider 5000** gives unmatched hardware performance by setting a new record as the fastest 16 bit AWG on the market (16 bit @ 6.16GS/s) and the highest Amplitude\*Bandwidth product (5Vpp\*2GHz).

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

- 6.16 GS/s (12.32 GS/s in RF mode)
- 16 bit Vertical Resolution
- Up to 5Vpp onto 50Ω with 2GHz Analog Bandwidth
- Minimum Edge Time ≤ 110ps
- Up to 4 Gpts 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



### Unmatched Hardware Performances

- 5Vpp into 50Ω with more than 2GHz of Analog Bandwidth
- 6.16GS/s and 16 bit Resolution
- 12.32GS/s in RF mode, one or two Carriers with I<sub>0</sub>/Q<sub>0</sub>, I<sub>1</sub>/Q<sub>1</sub> independent components
- 2, 4, 8 Differential or Single Ended Channels

### 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.

| Models          | Analog Channels | Digital Channels | Max. Sample Rate | Analog Bandwidth | Max. Record Length | Vertical Resolution | Max. Output Frequency | Max. Output Voltage (50Ω Load) |
|-----------------|-----------------|------------------|------------------|------------------|--------------------|---------------------|-----------------------|--------------------------------|
| <b>AWG5062</b>  | 2 S.E.          | 8                | 6.16GS/s         | 2GHz             | 4GS/Ch             | 16 bit              | 2GHz                  | 5Vpp                           |
| <b>AWG5062D</b> | 2 Diff.         |                  |                  |                  |                    |                     |                       | 1.5Vpp                         |
| <b>AWG5064</b>  | 4 S.E.          | 8/16             | 6.16GS/s         | 2GHz             | 4GS/Ch             | 16 bit              | 2GHz                  | 5Vpp                           |
| <b>AWG5064D</b> | 4 Diff.         |                  |                  |                  |                    |                     |                       | 1.5Vpp                         |
| <b>AWG5068</b>  | 8 S.E.          | 8/16/32          | 6.16GS/s         | 2GHz             | 4GS/Ch             | 16 bit              | 2GHz                  | 5Vpp                           |
| <b>AWG5068D</b> | 8 Diff.         |                  |                  |                  |                    |                     |                       | 1.5Vpp                         |



# PULSE RIDER 1000 Series

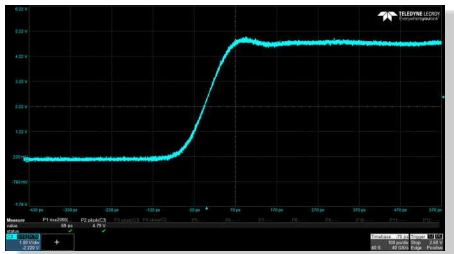


The **Pulse Rider Series** offers premium signal integrity with the easiest to use touch screen display interface (**SimpleRider™**).

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
- Min Pulse Width less than 300ps
- Dual and Quad Channels Systems
- SimpleRider™ touch User Interface



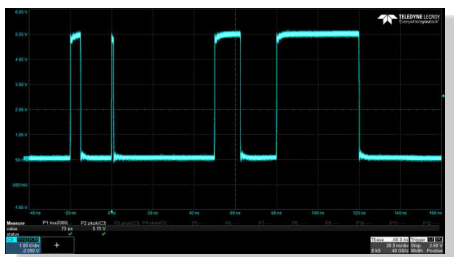
### Rider Fast Edge

First to market low cost Analog Edge Converter with the ability to reach less than 70ps edge (20-80%) at 5V into 50Ω, 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 800MHz output frequency.

| 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               |                     |                 |                              |                          |                             |                                     |

# PULSE RIDER 1500 Series

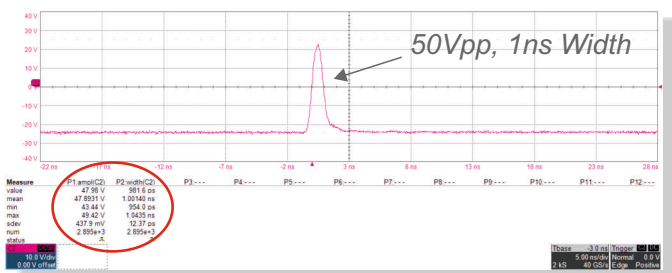


In the **Pulse Rider 1500 Series** generators, the output voltage can be adjusted up to 50 Volts pk-pk in a window of  $\pm 25$  Volts with 400 ps edge rate (based on RiderEdge™ technology).

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

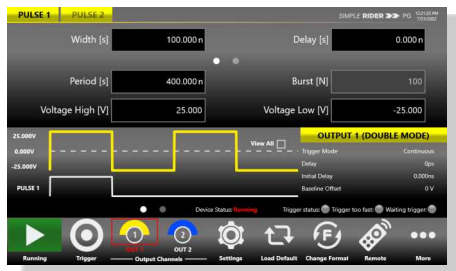
## Key Features

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



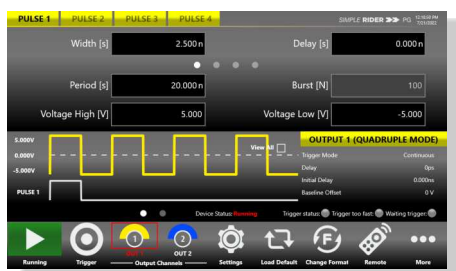
## 50Vpp Rider Fast Edge™

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



## Multiple Pulse Mode

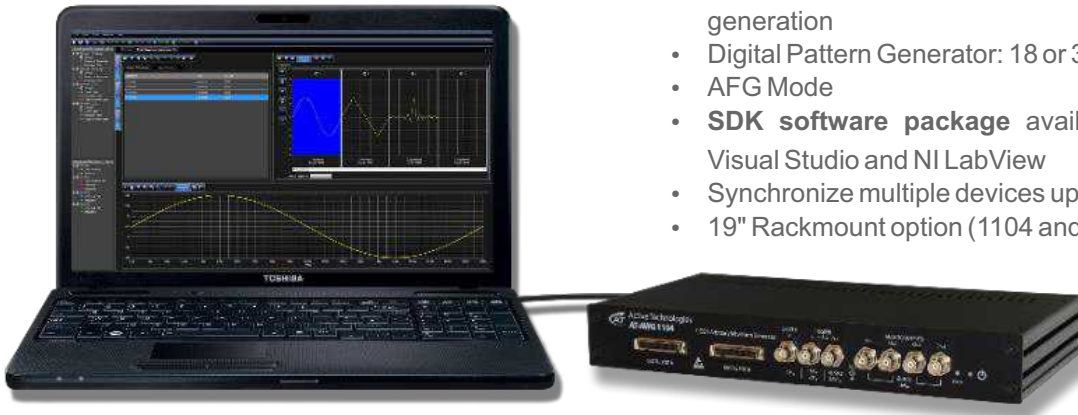
Double, triple or quad pulses, with fully independent timing parameters and up to 400MHz output frequency.

| 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               |                       |                           |                              |                          |                             |                                 |

# AT-AWG1100 Series

## Key Features

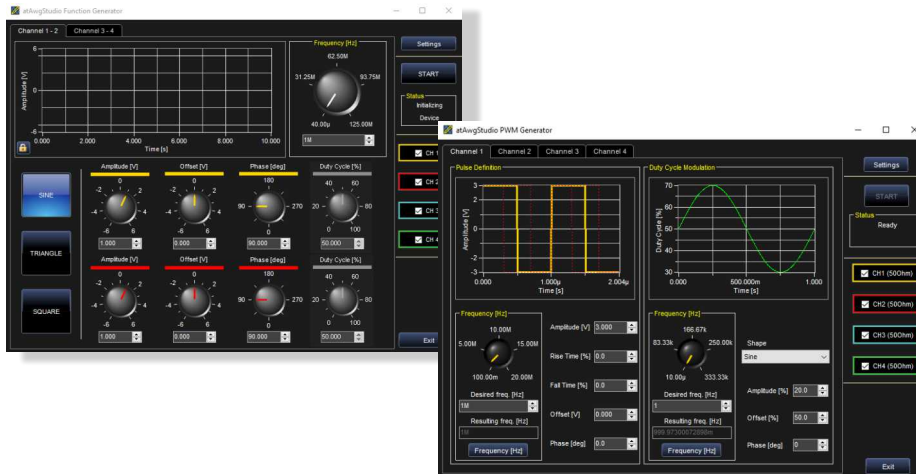
- Flexibility: Arbitrary and Direct Digital Synthesis (DDS) waveform generation
- Built-in modulation capabilities: AM, PM, FM, ASK, PSK, FSK, PWM
- Mixed signal generation: analog and digital pattern generation
- Digital Pattern Generator: 18 or 36 channels
- AFG Mode
- **SDK software package** available for Microsoft Visual Studio and NI LabView
- Synchronize multiple devices up to 32 channels
- 19" Rackmount option (1104 and 1104D only)



### AT-AWG 1100 Series

A waveform generator must provide flexibility to cover a wide range of applications, ensure high-performance to meet demanding requirements and be easy to use.

AT-AWG 1102/1104 meet the needs of today's engineers and technicians with uncompromised performance, a wide variety of signal types, modulation schemes and generation modes all controlled through an intuitive, easy to use interface.



| Models   | Analog Channels | Digital Channels | Max. Sample Rate                       | Analog Bandwidth | Record Length | Vertical Res. | Max. Output Frequency | Max. Output Voltage |
|----------|-----------------|------------------|--|------------------|---------------|---------------|-----------------------|---------------------|
| AWG1102  | 2               | NO               | 1GS/s Interpolated (250MS/s Real Time) | 125MHz           | 2MS/Ch        | 16 bit        | 125MHz                | 12Vpp               |
| AWG1102D |                 | 18               |  |                  |               |               |                       |                     |
| AWG1104  | 4               | NO               |  |                  |               |               |                       |                     |
| AWG1104D |                 | 36               |  |                  |               |               |                       |                     |

### **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.



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