

Active Technologies

Waveform and Pulse Generators

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EXPERIENCE & EXPERTISE

Active Technologies was founded in 2003 as start-up of the University of Ferrara, in Italy, and immediately involved in large EU research experiments, mostly vs semiconductor test and innovative instrumentation design.

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

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

Arbitrary Waveform Generators

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ARB Rider 2000 Series

The AWG Rider 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 x 2 interpolation).
- Minimum Edge Time ≤ 2.2 ns.
- Up to 24 Vpp Output Range.
- 256 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 180 MHz 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 and Digital Mixed Mode

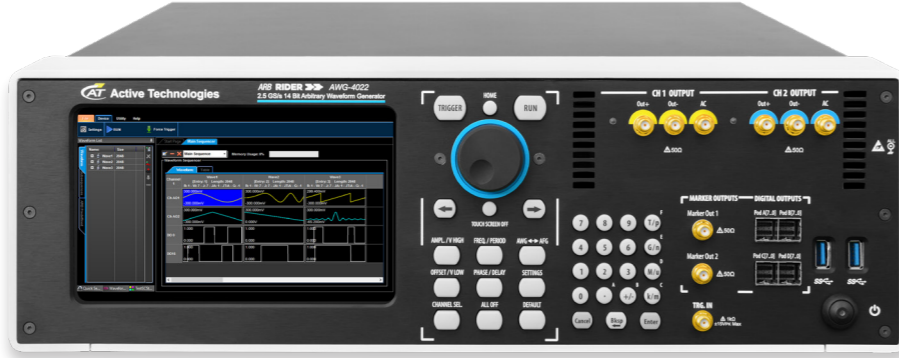
With up to 4 analog channels and 8 digital channels it is possible to generate full featured mixed signal stimuli to cover the most demanding testing needs.

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

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 1.2 GS/s, 16 bit Vertical Resolution.
- Minimum Edge Time ≤ 1.1 ns.
- Up to 24 Vpp Output Range.
- Up to 1 Gpts per Channel.
- Up to 32 Digital Channels synchronous with Analog Generation.
- 300 Mbps Multi-Level Serial data Pattern Generator,
- Multi Instrument Synchronisation: 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 more than 300 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 Synchronisation.

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

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 5 Vpp onto 50 Ω with 2G Hz Analog Bandwidth.
- Minimum Edge Time ≤ 110 ps.
- 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 Synchronisation: up to 32.
- Analog and 128 Digital Channels.
- Four Operating Modes: AFG, AWG, DPG and SPG.

Best In Class Amplitude vs. Frequency

- 5 Vpp into 50 Ω with more than 2 GHz of Analog Bandwidth.
- 6.16GS/s and 16 bit Resolution.
- 12.32GS/s in RF mode, one or two Carriers with I0/Q0, I1/Q1 independent components.
- 2, 4, 8 Differential or Single Ended Channels.

Multiple Operating Modes

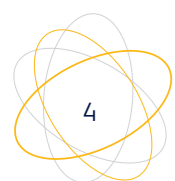
Three extremely powerful and intuitive User Interfaces designed for the 7" touchscreen provide advanced AFG, AWG, DPG and SPG functionalities.

Designers can create complex 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 Synchronisation to reach up to 32 Analog and 128 Digital Channels.

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



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 300 ps.
- Dual and Quad Channels Systems.
- SimpleRider™ touch User Interface.



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.

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 ±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 1 ns.
- Single and Double Channel System.
- SimpleRider™ touch User Interface.

50 Vpp 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.

Multiple Pulse Mode

Double, triple or quad pulses, with fully independent timing parameters and up to 400 MHz 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	100 mVpp to 50 Vpp Adj.	-25 V to +25 V (12.5 V res.)	<400 ps (up to 50 Vpp)	400 MHz (quad pulse mode)	5 ns to 8 s (10 ps res.)	1 ns to (period - 1 ns) (10 ps res.)
PG-1502	2	100 mVpp to 50 Vpp Adj.	-25 V to +25 V (12.5 V res.)	<400 ps (up to 50 Vpp)	400 MHz (quad pulse mode)	5 ns to 8 s (10 ps res.)	1 ns to (period - 1 ns) (10 ps res.)

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	10 mVpp to 5 Vpp Adj.	±2.5 V Adj.	<70 ps fixed	800 MHz (quad pulse mode)	8 ns to 8 s (10 ps res.)	300 ps to (period - 300ps)
PG-1074	4	10 mVpp to 5 Vpp Adj.	±2.5 V Adj.	<70 ps fixed	800 MHz (quad pulse mode)	8 ns to 8 s (10 ps res.)	300 ps to (period - 300ps)

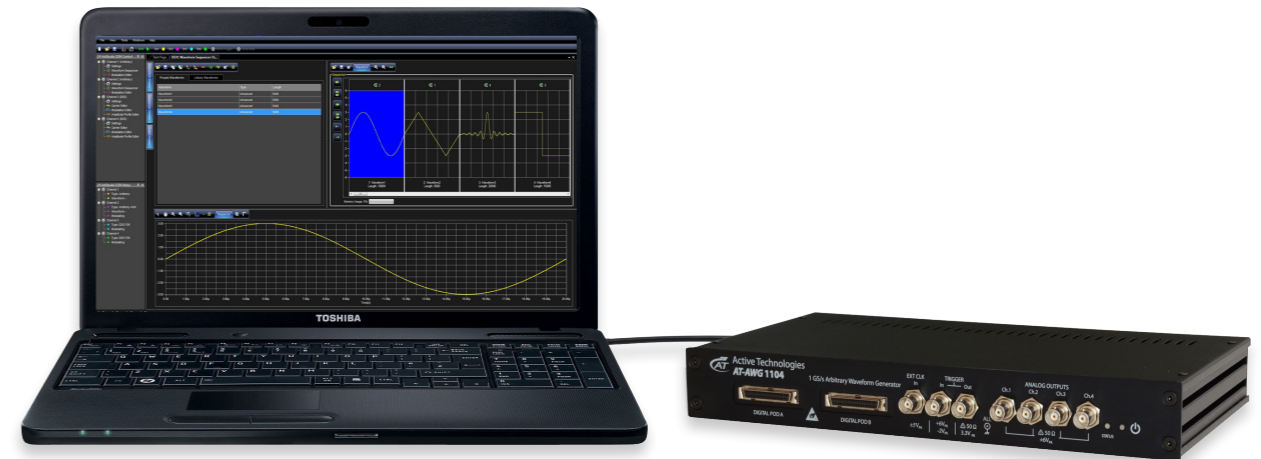
AT-AWG 1100 Series

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.

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.
- Synchronise multiple devices up to 32 channels.
- 19" Rackmount option (1104 and 1104D only).



Model	Analog Channels	Digital Channels	Max. Sample Rate	Analog Bandwidth	Record Length	Vertical Resolution	Max. Output Frequency	Max. Output Voltage
AWG1102	2	NO	1 GS/s Interpolated (250 MS/s Real Time)	125 MHz	2 MS/Ch	16 bit	125 MHz	12 Vpp
AWG1102D	2	18	1 GS/s Interpolated (250 MS/s Real Time)	125 MHz	2 MS/Ch	16 bit	125 MHz	12 Vpp
AWG1104	4	NO	1 GS/s Interpolated (250 MS/s Real Time)	318 MHz	2 MS/Ch	16 bit	125 MHz	12 Vpp
AWG1104D	4	36	1 GS/s Interpolated (250 MS/s Real Time)	318 MHz	2 MS/Ch	16 bit	125 MHz	12 Vpp

Service and Support

Southern Scientific has a team of fully qualified service engineers, who support customers spanning the length and breadth of the UK. We can provide factory or on-site service as required, based on single visits, planned maintenance or full support under contract. We maintain a high level of spare parts, ensuring lifetime support capability.

Our systems group can offer its service for the larger installed equipment, from initial planning to installation, completion and training. We can provide expert knowledge and experience, gained through involvement in a number of large-scale projects throughout the years.

ISO Certified

Southern Scientific Ltd is certified to ISO 9001 and ISO 13485 representing the high level of quality assurance and management that we provide at every stage of the supply process, whether a product is distributed on behalf of our trusted manufacturers or constructed in our UK workshop. This accreditation means that our customers can place an order knowing that the delivered product will be suitable for its intended use, fully compliant with EU legislation and in full working order.

All our products are CE marked.



Visit our website



Southern Scientific Limited

Scientific House, The Henfield Business Park
Shoreham Road, Henfield, BN5 9SL, UK

E-mail: info@southernscientific.co.uk

Tel: +44 (0)1273 497600

www.southernscientific.co.uk

