

SIGNAL GENERATORS

The definition of versatility, Tektronix signal generators create a virtually unlimited range of standard and custom signals, from sine or pulse to ideal or distorted and anything in between.



	TSG4100A	AFG3000C	AFG2000	AFG1000
Bandwidth	Internal 6 MHz, External 200 MHz	240 MHz, 150 MHz, 100 MHz, 50MHz, 25 MHz, 10 MHz	20 MHz	25 MHz, 60 MHz
Channels	1 LF and 1 RF	1 or 2 (independent or synchronized)	1	2
Memory Depth	16M bits	4 x 128 k points	4 x 128 k points	8 k -1 M points
Standard Waveforms	CW	Sine, Sine(x)/x, Square, DC, Ramp, Gaussian, Exponential Decay, Pulse, Lorentz, Noise, Arbitrary, Haversine, Exponential Rise	Sine, Sine(x)/x, Square, DC, Ramp, Gaussian, Exponential Decay, Pulse, Lorentz, Noise, Arbitrary, Haversine, Exponential Rise	Sine, Square, Pulse, Ramp, Noise, and 45 Frequently Used Arbitrary Waveforms
Modulation	AM/FM/PM/Pulse, ASK/FSK/PSK/QAM/CPM/VSB, GSM, GSM-EDGE, W-CDMA,APCO-25, DECT, NADC, PDC,TETRA, and Audio clip (Analog AM and FM)	AM, FM, PM, FSK, PWM, External	AM, FM, PM, FSK, PWM, External	AM, FM, PM, FSK, ASK, PSK, PWM, External
Additional Modes	External IQ Waveform Input, Custom IQ Waveform Generation, ARB Waveform Generation (Remote Mode), Additive White Gaussian noise	Sweep, Burst, Add Noise Impairment	Sweep, Burst, Add Noise Impairment	Sweep, Burst

CHOOSING YOUR SIGNAL GENERATOR

In electronic test and measurement, more often than not, a signal source is required to generate signals that are not available unless externally provided. Below is a list of common features that you may want to consider when choosing a signal generator for your application.

1 Sample (Clock) Rate

Sample rate, usually specified in terms of megasamples or gigasamples per second, denotes the maximum clock or sample rate at which the instrument can operate. The sample rate affects the frequency of the main output signal. In general, you should choose an instrument where the sampling frequency is twice that of the highest spectral frequency component of the generated signal to ensure accurate signal reproduction. The maximum sample rate also determines the smallest time increment that can be used to create waveforms. Typically this figure is simply the result of the calculation: $T = 1/F$, where T is the timing resolution in seconds and F is the sample rate.

2 Memory Depth (Record Length)

Memory depth, or record length, plays an important role in signal fidelity because it determines how many points of data can be stored to define a waveform. Deeper memory enables you to store more waveform detail and/or more cycles of the desired waveform.

3 Vertical (Amplitude) Resolution

Vertical resolution pertains to the binary word size, in bits, of the instrument's DAC, with more bits equating to higher resolution. The vertical resolution of the DAC defines the amplitude accuracy and distortion of the reproduced waveform. Although more is better, there is a general trade-off for most arbitrary waveform instruments; the higher the resolution, the lower the sample rate.

4 Features and Capabilities

Tektronix signal generators offer a range of features and output capabilities. When choosing your signal generator, you should also evaluate standard waveforms, modulation capabilities, output amplitude and waveform editing software to ensure that the instrument meets your needs.

SIGNAL GENERATORS: ARBITRARY WAVEFORM GENERATORS

Tektronix arbitrary waveform generators enable complex signal generation with simple, easy to use tools. The AWG family provides leading-edge performance with sample rates up to 50 GS/s, up to 4 channels, and software packages that simplify the creation of these complex signals. The unparalleled flexibility, speed, and fidelity of the Tektronix AWGs make them an ideal solution for high speed serial, optical communications, radar test, and electronic warfare.



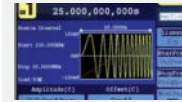
	AWG4000	AWG5000	AWG7000A
Channel	2	2-4	1-2
Sampling Rate	Up to 2.5 GS/s	Up to 1.2 GS/s	1.5 KS/s – 50 GS/s
Bandwidth	750MHz	300MHz	14GHz
Analog Channel Vertical Resolution	14 bits	14 bits	10 bits
Memory	Up to 64Mpts	16M point per channel (32M optional)	2GS - 8GS
Output Frequency Range	600 MHz	480 MHz	20 GHz
Portability	Yes	No	No
Code Compatibility (with current AWG5k)	No	Yes	—
AFG Mode	Yes	No	No
Digital Outputs	16/32-bit optional channels	28-bit optional on 2-ch models, 1-2 markers/channel	None
Multi-unit Synchronization	Yes	—	Yes
Output Amplitude	Up to 5Vpp	370ns (basic)/2µs (adv.)	250mV – 500mV (single ended), 500mV – 1.0V (differential)
Sequencing	YES	YES	YES
Applications	Radar, wireless communications, component characterization/validation, embedded system design and test	Radar, research, and electrical test	RF/MW communications and defense electronics, high-speed serial communications, mixed signal design and test, clock source, optical and advanced research
Additional Modes	RFXpress, ArbXpress	—	SourceXpress



DATA SHEET

PRODUCT HIGHLIGHTS

- Full functional AFG with multiple run modes and a built-in 200 MHz frequency counter
- 1 mVpp to 10 Vpp output amplitude across full frequency range
- Intuitive UI with 3.95" color display provides quick access to functions and parameters, and gives full confidence on settings
- Fully supports TekSmartLab™
- 5-year warranty



A fully functional AFG with modulation, sweep and burst modes.



AFG1000 fully supported by TekSmartLab™.

AFG1000 Series

The AFG1000 Series Arbitrary/Function Generator offers the best price performance ratio in its class. It's tailored for educational users with 25 MHz, 60 MHz bandwidth, 2 output channels, and 1 mVp-p to 10 Vp-p output amplitude across full bandwidth. It generates all kinds of waveforms needed in a lab.

MODEL	ANALOG CHANNELS	OUTPUT BANDWIDTH	ANALOG SAMPLE RATE	MEMORY DEPTH	AMPLITUDE (INTO 50 OHM)	BUILT-IN FREQUENCY COUNTER
AFG1022	2	25 MHz	125 MS/s	8 k	1mV _{p-p} to 10V _{p-p}	200 MHz, 6 digits
AFG1062	2	60 MHz	300 MS/s	1 M	1mV _{p-p} to 10V _{p-p}	200 MHz, 6 digits

RECOMMENDED ACCESSORIES

174-4401-00	USB type A to type B cable – three feet
174-6053-00	Cable; USB 2.0 Compliant, type A Male to type B male, 6 feet long
012-1732-00	BNC to BNC CABLE - three feet
159-0107-00	Fuse, cartridge; 5 x 20 mm, 2 A, 250 V, time-delay
159-0397-00	Fuse, cartridge; 5 x 20 mm, 4 A, 250 V, time-delay

SHIPS WITH PRODUCT

- Power Cord
- USB Cable
- CD-ROM with Programmer Manual, Service Manual,
- BNC to BNC cables
- Fuses
- Calibration Certificate



AFG2000

Usually, generating a range of signals requires investing in a high-end signal generator. But with the Tektronix AFG2000 Arbitrary Function Generator, that's no longer the case. With 20 MHz bandwidth, 14-bit resolution, and 250 MS/s sample rate, it can create simple and complex signals. But perhaps its most impressive feature is its entry-level price.

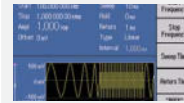
DATA SHEET

VIRTUAL TOUR

360° VIEW

PRODUCT HIGHLIGHTS

- NIST-traceable calibration with high reliability
- Form factor is ideal for both benchtop and rack mount applications
- Powerful pulse generation combined with adjustable edge time, flexible duty cycle, and PWM mode



Wide frequency range (1 μ Hz to 20 MHz) supports amplifier and filter testing applications.



Quickly modify, create and transfer waveforms using the included ArbExpress® software.

MODELS	ANALOG CHANNELS	OUTPUT BANDWIDTH	ANALOG SAMPLE RATE	MEMORY DEPTH	AMPLITUDE (INTO 50 Ω)
AFG2021	1	20 MHz	250 MS/s	4 x 128 k	10 mV _{p-p} to 10 V _{p-p}

RECOMMENDED ACCESSORIES

Cables

- 012-1732-00 BNC cable shielded, 3 ft.
- 012-0991-00 GPIB cable, double shielded
- 011-0049-02 50 Ω BNC Terminator

Accessories

- RMU2U Rackmount kit
- 159-0454-00 Fuse set, 3pcs, 0.125 A

INSTRUMENT OPTIONS

- Opt. GL GPIB/LAN Interface (configured at time of purchase)

RECOMMENDED SERVICE

- SILV200 5-year Extended Warranty

SHIPS WITH PRODUCT

- User Manual
- Power Cord
- USB Cable
- BNC to BNC cable
- CD-ROM with Programmer Manual, Service Manual, LabVIEW and IVI Drivers
- CD-ROM with ArbExpress® Software
- NIST-traceable Calibration Certificate

LEARN MORE

about the time-saving features of ArbExpress with the “Replicating Real World Signals with an Arbitrary/Function Generator” Application Note.





AFG3000C Series

Test complex designs faster with a fully loaded function generator. Featuring 12 standard waveforms, plus arbitrary capability and many modulation options, this generator supports a wide range of application needs. Add in best-in-class performance and 25 shortcut keys and you have a generator that's loaded with features and light on complexity.



DATA SHEET



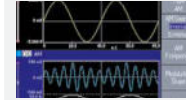
VIRTUAL TOUR



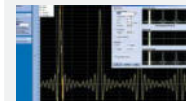
360° VIEW

PRODUCT HIGHLIGHTS

- High sample rate and stable time base ensure signal precision and stability
- 25 shortcut buttons and 5.6" color display provide quick access to functions and parameters, and give full confidence on settings
- 9 models with up to 240 MHz bandwidth and up to 20 V_{p-p} output amplitude cover customer needs in most applications
- Free ArbExpress software enables an easy way to create, edit and load arbitrary waveforms



Large color display shows your settings and waveforms at a single glance.



Create and modify waveforms with ease with the included ArbExpress® software.

MODELS	ANALOG CHANNELS	OUTPUT BANDWIDTH	ANALOG SAMPLE RATE	MEMORY DEPTH	AMPLITUDE (INTO 50 Ω)
AFG3011C	1	10 MHz	250 MS/s	4 x 128 k	20 mV _{p-p} to 20 V _{p-p}
AFG3021C	1	25 MHz	250 MS/s	4 x 128 k	10 mV _{p-p} to 10 V _{p-p}
AFG3022C	2	25 MHz	250 MS/s	4 x 128 k	10 mV _{p-p} to 10 V _{p-p}
AFG3051C	1	50 MHz	1 GS/s (<=16k), 250 MS/s (>16k)	4 x 128 k	10 mV _{p-p} to 10 V _{p-p}
AFG3052C	2	50 MHz	1 GS/s (<=16k), 250 MS/s (>16k)	4 x 128 k	10 mV _{p-p} to 10 V _{p-p}
AFG3101C	1	100 MHz	1 GS/s (<=16k), 250 MS/s (>16k)	4 x 128 k	20 mV _{p-p} to 10 V _{p-p}
AFG3102C	2	100 MHz	1 GS/s (<=16k), 250 MS/s (>16k)	4 x 128 k	20 mV _{p-p} to 10 V _{p-p}
AFG3151C	1	150 MHz	1 GS/s (<=16k), 250 MS/s (>16k)	4 x 128 k	20 mV _{p-p} to 10 V _{p-p}
AFG3152C	2	150 MHz	1 GS/s (<=16k), 250 MS/s (>16k)	4 x 128 k	20 mV _{p-p} to 10 V _{p-p}
AFG3251C	1	240 MHz	2 GS/s (<=16k), 250 MS/s (>16k)	4 x 128 k	50 mV _{p-p} to 5 V _{p-p}
AFG3252C	2	240 MHz	2 GS/s (<=16k), 250 MS/s (>16k)	4 x 128 k	50 mV _{p-p} to 5 V _{p-p}

RECOMMENDED ACCESSORIES

Cables

012-1732-00 BNC cable shielded, 3 ft.

011-0049-02 50 Ω BNC terminator

012-0991-00 GPIB cable, double shielded

Accessories

RM3100 Rackmount kit

RECOMMENDED SERVICE

SILV400 5-year Extended Warranty

SHIPS WITH PRODUCT

- Quick Start User Manual
- Power Cord
- USB cable
- BNC to BNC cable
- CD-ROM with Specifications and Performance Verification Manual, Programmer Manual, Service Manual, LabVIEW and IVI Drivers
- CD-ROM with ArbExpress™ Software
- NIST-traceable Calibration Certificate

LEARN MORE

about the time-saving features of ArbExpress with the "Replicating Real World Signals with an Arbitrary/Function Generator" Application Note





DATA SHEET

PRODUCT HIGHLIGHTS

- True DC to 2/4/6 GHz
- $\leq \pm 0.30$ dB (typ) amplitude accuracy from 10 MHz to 6 GHz
- Phase Noise: -113 dBc/Hz @ 20kHz offset from 0 dBm, 1 GHz CW carrier
- Soft key upgrade to vector/digital modulation at very low cost, supporting 10 widely used formats
- GPIB, RS-232, and LAN interfaces
- I/Q modulation inputs (max 400 MHz RF bandwidth)
- Supports NI LabVIEW programming



A versatile RF solution for the generation, receiving and analysis of both analog and vector signals at budget point.



Good performance and flexible configurations for debug and troubleshooting.

TSG4100A Series

The TSG4100A Series RF Vector Signal Generator offers mid-range performance at an entry-level RF signal generator price, generating both analog and vector/digital signals for most popular applications. Lightweight, compact, and rack-mountable with LAN/RS-232/GPIB interfaces. A vibrant 4.3-inch LCD display lets you set your test waveforms with ease.

MODEL	FREQUENCY RANGE	PHASE NOISE (20KHZ OFFSET FROM 0 DBM, 1 GHZ CW CARRIER)	AMPLITUDE RANGE	MODULATION FORMATS
TSG4102A	0 to 2 GHz	-113 dBc/Hz	+16.5 to -110 dBm	AM/FM/PM/Pulse; ASK/FSK/PSK/QAM/CPM/MSK/VSB; GSM/EDGE/TETRA/NADC/ W-CDMA/P-25/DECT, etc.
TSG4104A	0 to 4 GHz	-113 dBc/Hz	+16.5 to -110 dBm	
TSG4106A	0 to 6 GHz	-113 dBc/Hz	+16.5 to -110 dBm (< 4 GHz) +10 to -110 dBm (> 4 GHz)	

RECOMMENDED ACCESSORIES

TSG4100A-ATT	30 dB, 5 W RF attenuator up to 6 GHz
Option VM00	Basic vector modulation package with internal 6 MHz modulation bandwidth
Option EIQ	External 200 MHz modulation bandwidth (requires Option VM00)

SHIPS WITH PRODUCT

- Type-N M-M RF Cable
- Documentation CD
- Installation and Safety Instructions
- Calibration Certificate
- Power Cord

LEARN MORE

with the “Versatile Vector and Digital Modulation Solution” Application Note



LEARN MORE

with the “High Accuracy, Low Amplitude RF Signal Generation in Receiver Sensitivity Testing” Application Note






DATA
SHEET



VIRTUAL
TOUR

PRODUCT HIGHLIGHTS

- Baseband and intermediate frequency modulation for wireless communications and defense electronics
- Component and circuit characterization and validation
- Embedded circuit design and test
- Mixed-signal circuit design and test
- Clock and system synchronization
- Replication of real-world signals



Two analog channels with up to 32-bit optional digital channels.



Intuitive user interface features touchscreen, buttons, and Windows-based keyboard and mouse.

AWG4000 Series

The AWG4000 Series combines arbitrary function generator (AFG), arbitrary waveform generator (AWG), and digital pattern functions in one instrument. Synchronized 2 analog channels and optional 32-bit digital output accelerate your mixed signal designs. An intuitive user interface and compact desktop form factor make it exceptionally easy to use. With unmatched performance, versatile functionality, outstanding usability, and upgradability, the AWG4000 Series is an affordable waveform generation platform to stretch the specifications of your designs to the limit.

MODELS	ANALOG CHANNEL	ANALOG BANDWIDTH	DIGITAL CHANNEL	OUTPUT FREQUENCY	RECORD LENGTH	MAX SAMPLE RATE	VERTICAL RESOLUTION
AWG4162	2	750 MHz	32-bit optional	600 MHz	1M point (16/32/64 M point optional)	2.5 GS/s	14 bits

RECOMMENDED ACCESSORIES

AWG4DIG 16LVDS	Digital output LVDS cable (16-bit)
AWG4DIG SCKT	AWG4k Digital Channel Connector on DUT (Amphenol, U65-B12-40E0C)
AWG4 HDDE	Additional removable HDD drive
AWG4 SYNC	Synchronization Cable
HCTEK54	Hard Carrying Case
RMD5000	Rackmount Kit
TEK- USB-488	USB to IEEE488 (GPIB) Communications Adaptor for USBTMC-USB488 Compliant Tektronix Instruments

SOFTWARE

RFX100 RFXpress Software
See page 52 for more information

MEMORY UPGRADE OPTIONS

Information about memory upgrade options for the AWG4000 Series can be found at www.tek.com/arbitrary-waveform-generator/awg4000

SHIPS WITH PRODUCT

- Quickstart User Manual
- Power Cord
- USB type A to type B Cables
- Touchscreen Stylus
- Front Cover
- Accessories
- Software CD and Documentation CD
- Calibration Certificate

WATCH THE VIDEO

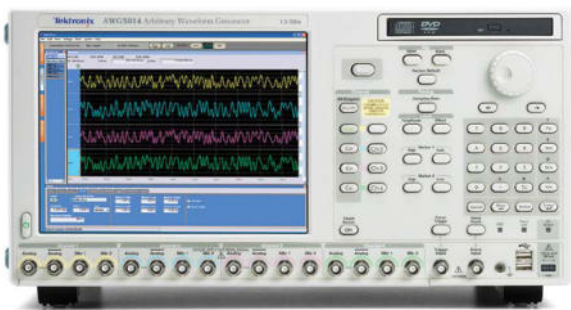
"How to Generate Triggering Pulses for Embedded Systems using the AWG4000 Series."



WATCH THE VIDEO

"Speed up Characterization of Mixed Signal Designs with the AWG4000 Series."

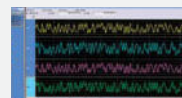




DATA SHEET

PRODUCT HIGHLIGHTS

- I/Q modulator test
- Consumer electronics
- Serial data
- RF Baseband Signal Generation



4 synchronized channels in a single instrument.



Quickly modify, create and transfer waveforms using either RFXpress or SerialXpress.

AWG5000 Series

With 14-bit vertical resolution up to 1.2 GS/s, 4 analog and 32 digital channel outputs, the AWG5000 Series Arbitrary Waveform Generator is the ideal solution for versatile mixed signal generation. The AWG5000 Series gives you a unique combination of analog and digital output performance, allowing you to generate analog and digital IQ, as well as IF signals in a single instrument. With the addition of advance sequencing and dynamic jump capability, extremely complex waveforms can easily be created to more closely simulate real-world environments.

MODELS	ANALOG CHANNEL	ANALOG BANDWIDTH	DIGITAL CHANNEL	OUTPUT FREQUENCY	RECORD LENGTH	MAX SAMPLE RATE	VERTICAL RESOLUTION
AWG5002C	2	Up to 230 MHz	28	240 MHz	16M point per channel (32M optional)	600 MS/s	14 bits
AWG5012C	2	Up to 300 MHz	28	480 MHz	16M point per channel (32M optional)	1.2 GS/s	14 bits
AWG5014C	4	Up to 300 MHz	—	480 MHz	16M point per channel (32M optional)	1.2 GS/s	14 bits

RECOMMENDED ACCESSORIES

Cables

- 012-1690-xx Pin Header Cable, SMA Cable, 40 in. (102 cm)
- 012-1503-xx SMB Cable, 20 in. (51 cm)

Accessories

- 016-1983-xx Rackmount kit
- 016-1979-xx Front Removable HDD Bay

RECOMMENDED SERVICE

- R3DW Repair Service Coverage 3 Years
- R5DW Repair Service Coverage 5 Years

SOFTWARE

- RFXpress® Software for AWG5000, AWG70000 (RFX100)
- SerialXpress® Software for AWG5000, AWG70000 (SDX100)

See page 52-53 for more information

SHIPS WITH PRODUCT

- USB Mouse
- Compact USB Keyboard
- Front Cover
- Power Cable
- Lead set for DC output
- Software CD and Instructions
- Documentation CD with Browser
- Quick Start User Manual and Registration Card
- Certificate of Calibration



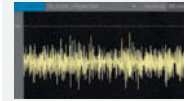

DATA
SHEET



VIRTUAL
TOUR

PRODUCT HIGHLIGHTS

- Generate wide bandwidth signals at baseband, IF and RF frequencies with excellent dynamic range
- Accelerate designs and research by generating waveforms that could not previously be created
- Add impairments to waveforms, eliminating the need for additional hardware
- Ability to sync multiple units together to increase transmission bandwidth



Seamlessly import waveforms from MATLAB, Excel and other software packages.



Waveforms captured on scopes or spectrum analyzers can be played back on the AWG.

AWG70000 Series

The industry-leading AWG70000 Series arbitrary waveform generator represents the cutting edge in sample rate, signal fidelity, and waveform memory. Featuring up to up to 50 GS/s, 10-bit vertical resolution and unparalleled signal fidelity, the AWG70000 Series enables the easy generation of complex signals in wideband RF, coherent optical, high speed serial receiver test and advanced physics research applications.

	AWG70001A	AWG70002A
Sample Rate	1.5 KS/s to 50 GS/s	1.5 KS/s to 25 GS/s
Maximum Frequency	20.0 GHz	10.0 GHz
Analog Bandwidth	14 GHz	14 GHz
Rise Time	27 ps	22 ps
Dynamic Range (SFDR)	Up to -80 dBc	Up to -80 dBc
DAC Resolution	10 bits	10 bits
Output Voltage	1.0 Vp-p (Differential)	1.0 Vp-p (Differential)
Output Amplitude (single-ended)	-70 dBm to 25 dBm (Option-AC)	-70 dBm to 25 dBm (Option-AC)
Waveform Memory	Standard: 2G Samples, Optional: 16G Samples	Standard: 2G Samples, Optional: 8G Samples
Channels	1 (Differential)	2 (Differential)

SOFTWARE AND PLUGINS

Multitone, Notches & Chirp Plug-in for AWG70000 Series, and SourceXpress®

Generic Pre-compensation Plug-in for AWG70000 Series, and SourceXpress

Spread Spectrum Clocking (SSC) Plug-in for AWG70000 Series, and SourceXpress

S-Parameters Plug-in for AWG70000A, and SourceXpress

RF Generic Plug-in for AWG70000 Series, and SourceXpress

High Speed Serial Plug-in for AWG70000, and SourceXpress

Optical Plug-In for AWG70000, and SourceXpress

Radar Plug-In for AWG70000, and SourceXpress

OFDM Plug-In for AWG70000, and SourceXpress

See page 52-53 for more information

RECOMMENDED SERVICE

R3	3-year Extended Warranty
R5	5-year Extended Warranty
C3	Calibration Service 3 Years
C5	Calibration Service 5 Years
R3DW	Repair Service Coverage 3 Years
R5DW	Repair Service Coverage 5 Years

OPTION AC FOR AWG70001

Option AC adds a single-ended AC coupled connector to the front panel of the single channel AWG70001A Arbitrary Waveform Generator. This option adds an additional amplified and attenuated path to the AWG70001, expanding its output to -77 dBm to 18 dBm at 11 GHz and -90 dBm to 20 dBm at 14 GHz.

For more information visit:
tek.com/datasheet/awg70001a-arbitrary-waveform-generator-option-ac-datasheet

SHIPS WITH PRODUCT

- Keyboard
- Mouse
- Power Cord

RECOMMENDED ACCESSORIES

RFXpress
 SerialXpress
 Option-AC



PRODUCT HIGHLIGHTS

- Synchronize signal output from two to four AWG70000 instruments
- Synchronize each channel to within ± 10 ps
- Enable validation and compliance testing of high speed silicon and communications devices



Controlled directly in the AWG and requires no additional AWG software.



AWGSYNC01 AWG Synchronization Hub

The AWGSYNC01 enables synchronization of up to four AWG70001A or AWG70002A units, allowing up to eight channels to be aligned to the same clock, pattern jump and trigger inputs.

MODEL	DESCRIPTION	KEY SPEC	KEY SPEC	KEY SPEC
AWGSYNC01	AWG Synchronization Hub	Random Jitter (typical): 315 fs RMS Skew Repeatability/ Accuracy: ≤ 5 ps	Total Jitter (typical): 13 ps _{p-p}	Instrument to Instrument Skew: ± 10 ps

SHIPS WITH PRODUCT

- AWG Communication Cables
- Phase-matched Clock Cables
- Calibration Deskew Cables
- Power Cord



DATA SHEET



DOWNLOAD SOFTWARE

PRODUCT HIGHLIGHTS

- Build, add impairments and customize your signals before emulating them on an AWG instrument running on your PC
- Create waveforms, sequences, and sub-sequences and control multiple, synchronized AWGs from one instance
- Import common waveform files, including Matlab, Excel, SerialXpress, RFXpress, and more
- Pre-compensate, apply S-parameters, or add jitter, impairments, multipath, and Doppler to waveforms
- Install plug-ins that expand your signal design capabilities and use one interface



Applications specific plug-ins, like Optical, seamlessly integrate as tabs into the SourceXpress UI.



The SourceXpress pulse train allows users to add an array of impairments, modulation schemes, and more.

SourceXpress™

SourceXpress signal design and generation software allows you to build complex, difficult to code waveforms on your PC. Free software that controls, runs waveform generation plug-ins and emulates the AWG70000 environment on your PC. Create custom signals in its sophisticated, easy to use interface, before loading and playing them on Tektronix AWGs. SourceXpress plug-ins provide specialty generation solutions for RF, radar, high speed serial, and optical applications.

SOURCEXPRESS PLUG-INS

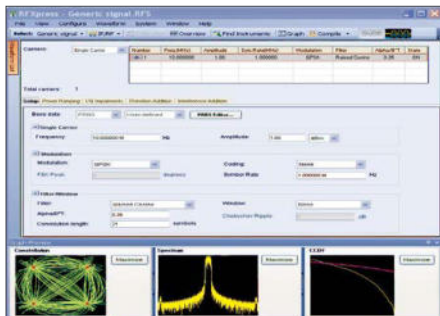
PRECOM	General Precompensation
HSS	High Speed Serial
MTONE	Multi-Tone and Chirp
RFGEN	RF Generic
SPARA	S-Parameter
SSC	Spread Spectrum Clock (SSC)
OPTICAL	Optical

LEARN MORE

View the SourceXpress Software Demo.



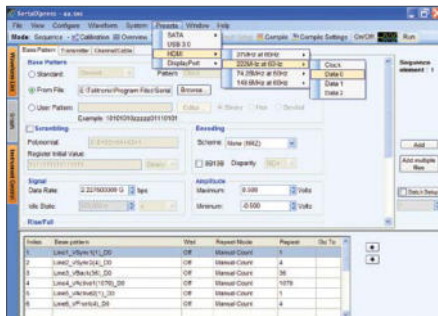
SIGNAL GENERATOR SOFTWARE, OPTIONS, & PLUG-INS



RFXpress® Software for the AWG5000, AWG70000 (RFX100)

If you are doing RF designs requiring signal modulation, Tektronix' RFXpress software for the AWG Series delivers advanced capabilities to synthesize digitally modulated baseband, IF and RF/microwave signals supporting a wide range of modulation schemes. RFXpress simplifies waveform creation. Special options are available for Radar, OFDM, S-Parameter, and UWB signals specifically.

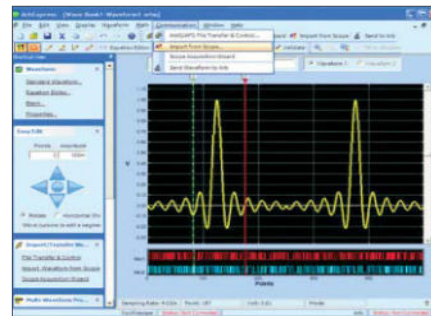
For more information visit:
tek.com/product-software-series/rfxpress



SerialXpress® Software for the AWG5000, AWG70000 (SDX100)

Recreate exact waveforms required for thorough and repeatable design validation, margin/characterization and conformance testing with SerialXpress and AWG Series signal generators. SerialXpress' easy-to-use graphical user interface allows for a combination of test signals and various impairments, including Inter Symbol Interferences (ISI), Duty Cycle Distortion (DCD), Spread Spectrum Clocking (SSC), Pre-emphasis and noise.

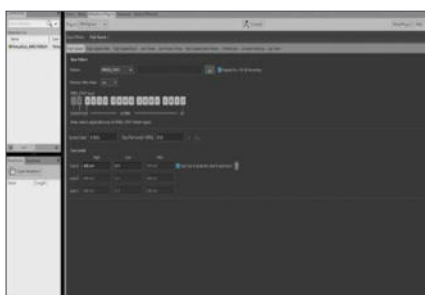
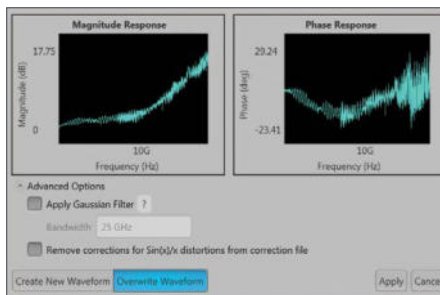
For more information visit:
tek.com/product-software-series/serialxpress-arbitrary-waveform-generator-software



ArbExpress® Signal Generator Software for AFGA2000, AFG3000, AWG5000, AWG70000

Designers often need to validate their designs under real-world conditions, requiring complex stimulus signals during test. With ArbExpress® software, waveforms can be quickly created and transferred to Tektronix arbitrary waveform and function generators to meet custom stimulus requirements.

For more information visit:
tek.com/product-software-series/arbexpress-signal-generator-software



Waveform Creation Plug-Ins for SourceXpress® and AWG70000

Whether you're working remotely on SourceXpress or generating waveforms on your AWG, Tektronix is developing a growing library of plug-ins to give you the waveform creation functionality you need. Small, powerful waveform creation and AWG application plug-ins allow for added integrated, fast and easy to use in SourceXpress or the AWG70000.

For more information visit:
tek.com/sourcexpress
tek.com/signal-generator/awg70000-arbitrary-waveform-generator

D-PHYXpress and C-PHYXpress Software for AWG70000 for D-PHY and C-PHY Rx Testing

D-PHY and C-PHY standards are moving up the speed to meet Camera and Display Application requirements. Users need to perform Receiver testing to meet Bit Error Requirements. The D-PHYXpress and C-PHYXpress applications allows user to create patterns for High Speed (HS), Low Power (LP) and High Speed Low Power (HS-LP) mode with Jitter and Noise as per MIPI CTS requirement. These applications can be used for Conformance and Margin testing as per CTS specifications. Users can use these applications remotely as well to generate D-PHY and C-PHY waveforms on AWG.

For more information visit: tek.com/mipi-0

SIGNAL GENERATOR SOFTWARE, OPTIONS, & PLUG-INS

Multitone, Notches & Chirp Plug-in for AWG70000 Series, and SourceXpress®

This software plug-in for the AWG70000 Series instruments allows for the effortless generation of notches, chirps and tones. Essential for customers in the military, aerospace, threat emitter and RF applications where creating and generating tones are required for a successful mission.

For more information visit: tek.com/signal-generator-software/multitone-chirp-awg-plug

Generic Precompensation Plug-in for AWG70000, and SourceXpress®

The Generic Precompensation plug-in creates correction coefficients that can be applied on waveforms to get flat frequency and linear phase response.

For more information visit: tek.com/signal-generator-software/generic-precompensation-plug

Spread Spectrum Clocking (SSC) Plug-in for AWG70000 Series, and SourceXpress®

Add an SSC module with precise control over modulation profile, spread and frequency deviation. **Key Features:**

- Supports commonly used modulation profiles like Triangular and Sinusoidal
- Handles Up-/Down-/Center- and User-Defined frequency spreading schemes
- Flexibility to customize the SSC profile through controlled injection of modulation distortions with regard to:
 - Exact location of occurrence of distortions on the profile
 - The duration and magnitude of the distortions

For more information visit: tek.com/datasheet/spread-spectrum-clocking-applications-datasheet-awg70000a-series-and-sourceexpress%2%ae

S-Parameters Plug-in for AWG70000A Series, and SourceXpress®

Emulation Tools for Arbitrary Waveform Generators is an integrated software plug-in that provides emulation of RF components from touchstone files. You can cascade multiple touchstone files to emulate an RF chain. The effect of the RF component can also be de-embedded by selecting the Inversion option. This option also adds a provision to characterize a two-port device (DUT). **Key Features:**

- Channel emulation through S-parameter filter
- Enables ISI feature in High Speed Serial

For more information visit: tek.com/datasheet/s-parameters-applications-datasheet-awg70000a-series-and-sourceexpress%2%ae

RF Generic Plug-in for AWG70000 Series, and SourceXpress®

RF Generic has all the features and functionality of RFXpress basic in a seamless interface that integrates with the AWG 70000 or SourceXpress. Customers no longer need to run a separate program to access RF, IQ and IF waveform creation. Smaller and faster, the RF Generic Plug-in has faster compile times and an intuitive GUI with help available directly in the GUI.

- Quickly and simply create digitally modulated IQ, IF, and RF waveforms
- Great flexibility to customize waveform to meet specific requirements
- Define baseband IQ, IF, and RF signals using a variety of modulation schemes
- Create single and multicarrier signals where each carrier is independently defined

For more information visit: tek.com/product-software/rf-generic-plug-in

High Speed Serial Plug-in for AWG70000 Series, and SourceXpress®

Serial Data Signal and Impairment Generation Tool for Arbitrary Waveform Generators.

The High Speed Serial waveform creation plug-in is a powerful, easy-to-use plug-in to synthesize high-speed serial data signals for Arbitrary Waveform Generators (AWG). It runs directly integrated into on the native GUI of the AWG 70000 Series arbitrary waveform generators or from an external PC on SourceXpress. **Key Features:**

- Flexibility: Jitter generation has become so flexible that the user now has the freedom to try various permutations and combinations of jitter parameters like Pj, Rj, ISI, Noise, Delay, etc.
- Replicate scenarios: The signals are digitally synthesized. All AWG setups can be recalled and the scenarios can be replicated on any other AWG within seconds.
- Analog nature of digital signals: In reality all digital signals are analog in nature and hence SerialXpress exploits the capabilities of an AWG to generate real-world signals.

For more information visit: tek.com/product-software/high-speed-serial-plug-in

Optical Plug-In for AWG70000 Series, and SourceXpress®

The Optical Waveform Generation Plug-in addresses the needs of optical customers with complex modulation schemes for the purpose of testing optical communications components and other devices. The Optical Signal Plug-in integrates into both the SourceXpress waveform creation platform and the AWG70000A series arbitrary waveform generator.

- Easily define complex dual polarization modulation schemes with separately configured baseband data. Independently adjust baseband offset for both X and Y data streams.
- Define optical waveforms using a variety of predefined modulation schemes such as BPSK, QPSK, OQPSK, OOK, NRZ, up to 8 PAM, and up to QAM1024 – including QAM8. Define and apply custom modulation schemes
- Generate data streams from variety of predefined patterns, a PRBS 31 generator, or define your own custom arbitrary data stream.

For more information visit: tek.com/optical-plug-awg70000-series-and-sourceexpress

ALLICE

Allied Consulting Engineers

make ALLICE your partner

ALLICE MESSTECHNIK GMBH

ALLICE SysTEC GMBH

KELSTERBACHER STRASSE 15-19 60528 FRANKFURT AM MAIN

TEL.: +49(0)69-67724-583 FAX: +49(0)69-67724-582

INFO@ALLICE.DE

www.allice.de

© 2017 ALLICE MESSTECHNIK GMBH & ALLICE SysTEC GMBH- ALLE RECHTE VORBEHALTEN.

© 2017 ALLICE MESSTECHNIK GMBH & ALLICE SysTEC GMBH- ALL RIGHTS RESERVED

VERWENDETE WARENZEICHEN UND SCHUTZRECHTE SIND EIGENTUM DER JEWEILIGEN HERSTELLER.

LOGOS AND COMPANY NAMES LISTED ARE TRADEMARKS OR TRADE NAMES OF THEIR RESPECTIVE OWNERS.