# 100MS/s Arbitrary Waveform/Function Generator 2416A

- **High Sampling Waveform Generator**
  100MS/s with 12-bit Waveform
- **Complete Set of Tools**
  Front-panel Waveform Editing Tools
  Waveform Creation Software (option)
  Sequence Generator
- **Systems Ready**
  GPIB and SCPI Commands
- **Value and Invaluable Support**
  Best Price
  Outstanding Technical Support


## Function Generator

- 50MHz Sine and Square Waves
- 9 Functions with Parameter Control
- Direct Frequency Setting

## Arbitrary Waveform Generator

- 100MHz Synthesized Clock
- Creation Software Interface
- Loop and Link Sequences

### Comprehensive Features

This high-sampling rate generator gives you excellent waveform definition and versatile signal capabilities. As a function generator, the 2416A provides 9 standard waveshapes with numerous parameters and continuously variable frequency. You'll find that ease-of-use in this model makes it a standout choice.

As an arbitrary waveform generator, the 2416A offers 99 waveforms with flexibility in the selection of waveform length and operating modes for the entire 64k point memory. A wide sample clock range, up to 100 MS/s and a choice of 3 filters give superior control of the synthesized signal.

For the long and complex patterns needed in data communications, the sequence generator meets the most challenging requirements. Up to nine sequence profiles may be stored with up to 99 steps in each profile. All 99 waveforms may be repeated up to 32,767 times.

### Superior Value

This competitively priced instrument is a standout in all the characteristics you need to provide test signals covering the waveform spectrum.

The 2416A is responsive from the front panel and proficient as a programmable instrument with GPIB (IEEE 488.2) and SCPI commands.

Equally important, as a Pragmatic customer, you have access to the best customer support in the industry. You will speak to a real person when you call. If you prefer, you can fax or e-mail 24 hours a day or visit our website.

*To bring an effective solution to your application is our highest priority.*


PRAGMATIC® INSTRUMENTS, INC.

**Tel:** (858) 271-6770 **Web:** http://www.pragmatic.com
**Fax:** (858) 271-9567 **E-mail:** awgsales@pragmatic.com

# 100MS/s Arbitrary Waveform/Function Generator 2416A

## Output Characteristics

Amplitude: (into 50Ω load)

| Range | Resolution | Accuracy |
|---|---|---|
| 1.00 to 9.99Vp-p | 10mV | 2%+20mV |
| 100mV to 999mVp-p | 1mV | 3%+4mV |
| 10mV to 99.9mVp-p | 100µV | 4%+2mV |

Offset: (into 50Ω load)

| Range | Window | Accuracy |
|---|---|---|
| ±0V to 4.50V | ±5.0V | 2%+1% ampl+20mV |
| ±0V to 450mV | ±500mV | 3%+1% ampl+5mV |
| ±0V to 45.0mV | ±50.0mV | 4%+1% ampl+2mV |

Filters:
- 50MHz 7-pole elliptic
- 25MHz 7-pole elliptic
- 20MHz 7-pole Gaussian

Squarewave / Pulse
- Rise/fall time: < 5ns. 10% to 90% of amplitude
- Aberration: <5%

Sync: Front panel TTL, SYNC OUT BNC

## Triggering Characteristics

Trigger Input: Rear panel TTL, TRIG IN BNC
Signal: ±10V(max.), width >15ns, pos transition
Sources: Manual, internal, external or bus
Modes: Continuous, triggered, gated, burst (1 to 32,767)
Frequency: External to 10MHz, internal from 20µs to 999s

## Standard Waveforms

Internal synthesizer
- Resolution: 4 digits
- Accuracy: ± 0.01% of reading
- Stability: <100PPM

Functions
Sine: 10µHz to 50MHz
- Distortion: <0.1% below 100kHz
- Harmonics: <30 dB below carrier, 100kHz to 50MHz
- Flatness: 1% to 1MHz; 5% to 10MHz; 15% to 50MHz

Triangle: 10µHz to 10MHz, adjustable phase
Square: 10µHz to 50MHz, adjustable duty cycle
Pulse: 10µHz to 1MHz, adjustable parameters
Ramp: 10µHz to 1MHz, adjustable rise/fall times
Sinc (Sin x/x): 10µHz to 1MHz, 4 to 999 cycles
Gaussian Pulse: 10µHz to 1MHz, 1000 to 65,535 time constant
Exponential: 10µHz to 1MHz, 0.01 to 20 time constant
DC: 1% to 100% of amplitude

## Arbitrary Waveforms

Memory: 64k points
Number of segments: 1 to 99
Vertical Resolution: 12 bits (4096 points)
Sampling Clock
- Source: Internal synthesizer, int. reference, external clock
- Range: 10mHz to 100MHz
- Resolution: 4 digits
- Accuracy: 0.01% of reading
- Stability: <100PPM

Built-in Utilities
- Clear, Fill, Offset, Invert, AM

## Sequenced Waveforms

Operation: Loop and Link
Number of Sequences: 1 to 9
Number of Steps: 1 to 99 steps
Repetitions: 0 to 32767 loops, 99 segments
Sampling Clock
- Source: Internal synthesizer, internal reference, external clock

Internal Synthesizer:
- Range: 10mHz to 100MHz
- Resolution: 4 digits
- Accuracy: 0.01% of reading
- Stability: <100PPM

## Environmental

Operating Temperature: 0° to +40°C, ambient
Specified Accuracy: +20° to 30°C
Storage Temperature: -40° to +70°C
Humidity Range: 80% R.H.

## GPIB Interface (IEEE Std. 488.2, SCPI)

Standard: IEEE 488.2-1987, SCPI-1993
Programmable Controls: All front panel control except POWER switch
Subsets: SH1, AH1, T6, TE0, L4, LE0, SR1, RL1, PP2, DC1, DT1, C0

## Option

WaveWorks Pro+
- Windows®-based waveform creation software
- Refer to the separate specification sheet.

## General

Display: 2 line, 16 characters, back-lit LCD
Power: 115/230 Vac, 50/60 Hz, 60 VA max.
Stored Settings: 10 complete front panel setups
Dimensions: 3.5” x 8.3” x 15.4” (H x W x L)
Weight: Approximately 9 lbs. (4.1 kg)

Weight and dimensions are approximate. Errors and omissions excepted. Prices and specifications subject to change without notice. Pragmatic is the registered trademark of Pragmatic Instruments, Inc.



PRAGMATIC® INSTRUMENTS, INC.
7313 Carroll Road, San Diego, CA 92121-2319 USA Tel: (858) 271-6770, Fax: (858) 271-9567
**Toll Free (800) PRAGMATIC or (800) 772-4628**
E-mail: awgsales@pragmatic.com, Web: http://www.pragmatic.com