2 MHz Arbitrary Waveform Generator

2411A

Output Waveforms
Up to 100 High-Definition Custom Waveforms, Sine, Square, Triangle, ±Sawtooth, DC, ±Exponential, AM, SCM, FM, Haversine, Lin/Log Sweep, ±Pulse, Gaussian, Sin x/x, Circle, Noise.

Sequence Generator (Optional)
Waveform: Loop and Link
Repetitions: Loop 1,000,000; Link 100
Program: 1000 Steps
Fil**e:** 100 Sequences

Waveform
Resolution:
Horizontal Points: 65,536 max
Vertical Points:16 bits, 65,536 (+32767,-32768)

Sample Rate:
Range: 0.1Hz to 2MHz (10s to 500ns)
Resolution: 4 digits
Accuracy:+/-50ppm

Transition Time: < 150ns
(Tested with square wave, filter off, 10Vp-p, 50Ω termination.)
THD + Noise: -86 dB typical
(Tested with 80kHz measurement bandwidth, 2MHz clock, sinewave, 1000 points, filter on full amplitude, 50Ω termination.)

Amplitude and Offset

Range	Resolution	Accuracy
±1.00 to 10V	10mV	1% of setting + 20mV
±100mV to 999mV	1mV	3% of setting + 5mV
±10mV to 99.9mV	100µV	5% of setting + 1mV

(Tested with 1kHz sinewave plus DC offset, 50 ohm source impedance, open circuit.)

Selectable Analog Filter
Cutoff: 700kHz 7th order, 40kHz 3rd order

Operational Modes
Continuous: Output runs continuously between selected memory address locations.
Triggered: Output at start point until triggered, then runs once.
Gated: As triggered except output is continuous until gate signal ends.
Burst: Each trigger outputs a preprogrammed number of wavelorms from 1 to 1,048,575.
Toggled: Alternate triggers gate the output waveform.
Hold: front-panel button or external signal stops waveform at present memory location while applied.
RTS: Front-panel button or external signal interrupts the output waveform and returns the output level to the start level.

Outputs
Output: Front-panel main waveform output. 50Ω impedance.
Sync Output: Front-panel TTL sync output. Programmable address and width or end pulse 50Ω impedance.
Clock Out: Rear-panel ARB waveform sample clock output (TTL). x2 sample clock.
Reference Out: Rear-panel internal 10MHz reference output (TTL).
Sync Trigger Out: Triggers additional units in series or parallel.
Sync 3/Run Out: Programmable address or high when output on.
DAC Out: Direct D/A converter output.
Sync 4/End Block Out: Programmable address or single pulse at end of each step (sequence operation only).

Inputs
Sum In: Allows external signal to be added to output. Gain=1, open circuit at 100kΩ input impedance
Trigger Input: Rear-panel TTL trigger input for triggered, gated. burst and toggled modes.
External TTL Sample Clock Input: ≤4MHz
Reference In: Rear-panel 10 MHz reference input will phase lock the internal crystal-controlled oscillator.
Hold In: Rear panel TTL input to stop waveform .
RTS In: Rear panel TTL input to initiate RTS mode.

Trigger Sources
External Trigger Input
Manual Trigger
Internal Trigger Generator

Creation Tools
Waveform Editing: Line Mode, Vertex Mode, Move (Copy & Paste) Insert Function, Sum Function, Digital Amplitude, Digital Offset
Waveform Math: A+B, A-B AxB

Stored Settings
Waveforms, Setups

Computer Interface
RS-232C: 19.2kBaud. max.
GPIB: IEEE Std. 488.2-1987 (Optional)

General
Temperature Range: +23°C +/- 3°C for specified operation. Operates 0'C to+50°C. Storagc -20°C to +60°C.
Dimensions: 11.5cm (4.53 in.) H; 25.8cm (10.14 in.) W; 30cm (11.81 in.) D.
Weight: 5.0kg (11 Ibs)
Power: 55VA; 45W (max) 100/120/220/240 VAC. +5%, -10%; 48 to 63 Hz.

Weight and dimensions are approximate. Errors and omissions excepted. Prices and specitications subject to change without notice. Pragmatic and Vertex Formatting are tradernarks of Pragmatic Instruments, Inc.

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