

50MHz Arbitrary Waveform Generator

2205A

Output

Channels: Two

Waveform: Dual-Precision ARB, Standard (sine, square, triangle, ramp); Composite (SUM, AM, QAM).

Waveform Resolution

Horizontal Resolution: 250,000 points/channel (std.)

Vertical Resolution: 12 bits; 4095 points (± 2047).

Waveform Sampling Rate

Range: 5 Hz to 50 MHz (0.2s to 20ns).

Resolution: 41/2 digits

Accuracy: ± 50 ppm

Waveform Rise/Fall Time

Less than 15ns, tested with square wave, filter off, 10Vp-p, 50 Ω termination.

Amplitude Modulation

External; AM inputs for ch 1 and ch 2.

Spectral Purity

THD+Noise: Typically below 70dB in 80kHz measurement bandwidth. Tested at 20MHz clock; sinewave; 20,000 points (1 kHz); filter on; full amplitude; 50 Ω termination.

Amplitude and Offset

Range	Resolution	Accuracy
± 1.00 - 10.20 V	10mV	2% of setting + 30mV
± 100 mV- 999 mV	1 mV	5% of setting + 5mV
± 10 mV- 99.9 mV	100 μ V	10% of setting + 1 mV

Note: 50ohm source impedance. measured open circuit. tested with 1kHz sinewave plus DC offset.

Analog Filter

User-selectable, 18MHz, 7th-order low-pass filter.

Operational Modes

Continuous: Output runs continuously between selected memory address locations.

Triggered: Output at start point until triggered by front panel pushbutton, external signal or inter-channel trigger signal, then runs once between programmed start and stop points.

Gate: As triggered except output is continuous until gate signal ends. (Entire address of waveform is always completed).

Toggled: Alternate triggered (internal or external) gate the output waveform.

Burst: Each trigger outputs a pre-programmed number of waveforms from 1 to 1,048,575.

Noise Generator

Type: Pseudo-random sequence analog and digital noise.

Clock Frequency: External. 0.1Hz to 5MHz, 4 digits resolution. External; ≤ 5 MHz.

Noise Sequence Length: $2^N - 1$ where N = 10, 15, 20, 25 or 30.

Amplitude Range: 2.58V rms maximum with 1 to 10V range of channel 1 output. Dynamic range ≥ 80 dB with ≥ 2 digits resolution.

Noise Bandwidth: Maximum noise BW = 150kHz. Variable with clock frequency.

Noise Outputs (Analog): Front-panel connector (600 Ω impedance) or added to channel 1 or channel 2 outputs.

Noise Output (Digital): Rear-panel parallel connector

Noise Modes: Continuous or gated (if added internally to either channel). Gate signal can be from front-panel trigger button or external trigger input.

Outputs

ARB Outputs: Front-panel main waveform outputs. 50 Ω impedance.

Sync Outputs: Front-panel TTL sync output for each channel. The address and width of each sync pulse is programmable. 50 Ω impedance.

Noise Out: Front-panel analog noise output. 600 Ω impedance.

Noise Clock Out: Rear-panel TTL output.

Noise Word Out: Rear-panel parallel TTL noise output.

Waveform Word Out: Rear-panel parallel TTL 12-bit waveform data output for each channel.

Clock Out: Rear-panel ARB waveform sample clock output (TTL).

Reference Out: Rear-panel internal 10-MHz reference output (TTL).

Monitor Scope Outputs: X, Y and Z rear-panel outputs. 8-bits resolution each. 250 Ω impedance.

Inputs

AM In: Front-panel inputs allow external signal to amplitude-modulate either channel. 50ohm input impedance.

Stimulus: Front-panel input allows external signal to be added to channel 1 output. Gain = -2 open circuit and -1 into 50ohm. 50 Ω input impedance.

Trigger Input: Rear-panel TTL trigger input for triggered, gated, toggled and burst modes.

Clock In: Rear-panel ARB waveform sample clock input (TTL ≤ 50 MHz).

Reference In: Rear-panel 10-MHz reference input. The internal crystal-controlled oscillator will phase-lock to the input.

Noise Clock Input: Rear-panel TTL clock input (≤ 5 MHz) for noise generator.

Trigger Sources

External Trigger Input: Shared between two channels and noise generator

Channel Trigger: Separate external trigger input for each channel.

Manual Trigger

Internal Trigger: Configurable

Remote interfaces

GPIB: IEEE Std. 488.2-1987; SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, C0, E1.

RS-232C: 19.2kBaud, max.

Accessories

32k RAM Memory Card and Editing Mouse.

General

Temperature Range: $+ 23^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for specified operation.

Operates 0°C to $+50^{\circ}\text{C}$. Storage -20°C to $+60^{\circ}\text{C}$.

Dimensions: 13.3 cm (5.25 in.) H; 43.2 cm (17 in.) W; 45.7 cm (18 in.) D.

Weight: 15.5kg (34 lbs)

Power: 150VA; 120W (max) 100/120/220/240 VAC, +5%, -10%; 48 to 63Hz.

Weight and dimensions are approximate. Errors and omissions excepted. Prices and specifications subject to change without notice.

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