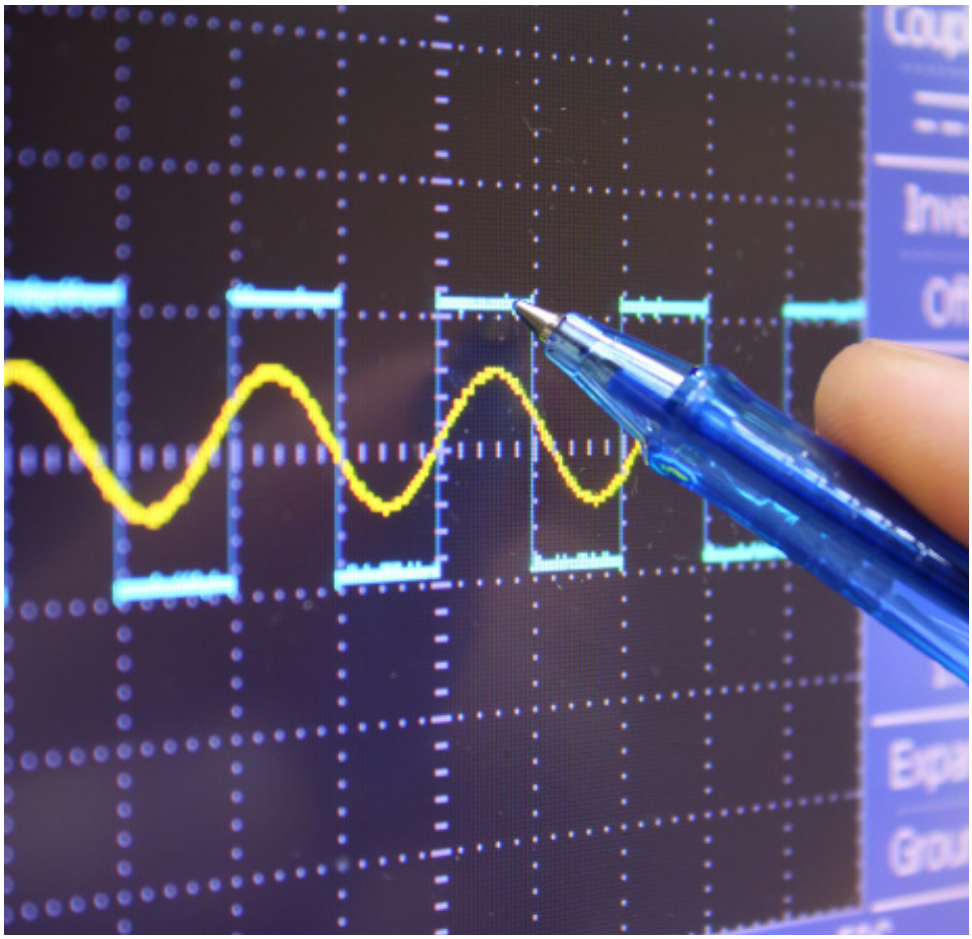
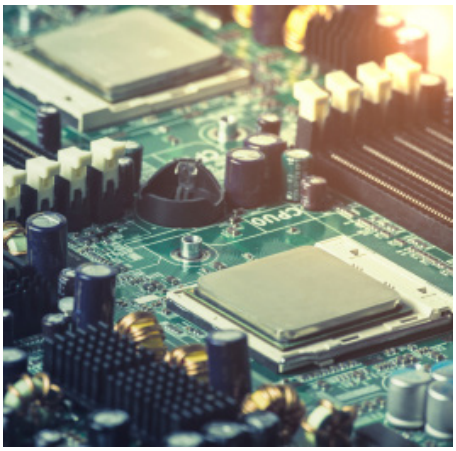
Model A2085 Arbitrary Waveform Generator



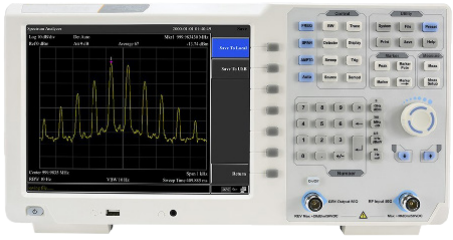


Features

- Max 80MHz frequency output
- Max 1.25GS/s sample rate, and 1μHz frequency resolution
- Vertical Resolution :14 bits, max 1M arb waveform length
- Phase Noise: -85 dBc/Hz @1 Gz and offset at 10 kHz
- High-accuracy frequency counter integrated,
  8 inch (800 × 600 pixels) multi-touch screen

Applications

- Electronic Circuit Debugging
- Education and Training
- Circuit Testing
- Design and Manufacture
- Automobile Maintenance and Testing



Model A2085 Datasheet V1.0

80 MHz Arbitrary Waveform Generator

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Performance Specifications

Channel		2
Frequency Output		80 MHz
Sample Rate		1.25GSa/s
Vertical Resolution		14 bits
Waveform		
Standard Waveform		sine, square, pulse, ramp, noise, and harmonic
Arbitrary Waveform		exponential rise, exponential fall, sin(x)/x, step wave, and others, total 152 built-in waveforms, and user-defined arbitrary waveform
Frequency (resolution 1 μHz)		
Sine		1μHz - 80MHz
Square		1μHz - 30MHz
Pulse		1μHz - 25MHz
Ramp		1μHz - 5MHz
Harmonic		1μHz - 40MHz
Noise		120MHz (-3dB, typical)
Arbitrary Waveform		built-in waveform: 1uHz - 15MHz user-defined waveform: 1uHz - 50MHz
Accuracy		±1ppm, 0°C - 40°C
Amplitude		
Into 50Ω load		1mVpp - 10Vpp (≤40MHz); 1mVpp - 5Vpp (≤80MHz) 1mVpp - 2.5Vpp (≤120MHz); 1mVpp - 1Vpp (≤250MHz)
Into open circuit, or high-Z		2mVpp - 20Vpp (≤40MHz); 2mVpp - 10Vpp (≤80MHz); 2mVpp - 5Vpp (≤120MHz); 2mVpp - 2Vpp (≤250MHz)
Accuracy		±(1% of |setting| + 1mVpp) (typical, 1kHz sine, 0V offset)
Resolution		1mV or 4 digits
Load Impedance		50Ω (typical)
DC Offset	Range (50Ω)	±(5 Vpk - Amplitude Vpp/2)
	Range (open circuit, high-Z)	±(10 Vpk - Amplitude Vpp/2)
	Accuracy	±(1% of |setting| + 1mV + Amplitude Vpp x 0.5%)
	Resolution	1mV or 4 digits
Sine Wave Spectrum Purity		
Harmonic Distortion (typical (0dB))		DC - 1MHz: <-65dBc 1MHz - 10MHz: <-60dBc 10MHz - 120MHz: <-50dBc 120MHz - 250MHz: <-45dBc
Total Harmonic Distortion		< 0.05 %, 10 Hz to 20 kHz, 1 Vpp
Spurious (non-harmonic) (typical (0dB))		≤10MHz: <-70dBc >10MHz: <-70dBc + 6dB/ octave
Phase Noise (typical (0 dBm, 10 kHz deviation))		10MHz: ≤-110dBc/Hz

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Square	
Rise / Fall Time	<5ns
Overshoot	<3%
Duty Cycle	50.0% (fixed)
Jitter (rms)	300ps + 100ppm
Pulse	
Pulse Width	12ns - 996875s
Rise / Fall Time	≥7ns
Overshoot	<3%
Jitter (rms)	300ps + 100ppm
Ramp	
Linearity	≤1% of peak output (typical, 1kHz, 1 Vpp, 50% symmetry)
Symmetry	0% to 100%
Harmonic	
Harmonic Order	≤16
Harmonic Type	even, odd, all, user
Harmonic Amplitude	could be set for all the harmonics
Harmonic Phase	
Arbitrary	
Waveform Length	2 points - 1M points
Vertical Resolution	14 bits
Minimum Rise/Fall Time	<7ns
Jitter (rms)	3ns
Modulation	
Type	AM, FM, PM, PWM, FSK, 3FSK, 4FSK, PSK, OSK, ASK, BPSK, sweep, and burst
AM	
Carrier Waveform	sine, square, ramp, and arbitrary (except DC)
Source	internal / external
Modulating Waveform	sine, square, ramp, noise, and arbitrary
Depth	0.0% - 100.0%
Modulation Frequency	2 mHz - 100 kHz
FM	
Carrier Waveform	sine, square, ramp, and arbitrary (except DC)
Source	internal / external
Modulating waveform	sine, square, ramp, noise, and arbitrary
Modulating Frequency	2 mHz - 100 kHz
PM	
Carrier Waveform	sine, square, ramp, and arbitrary (except DC)
Source	internal / external
Modulating Waveform	sine, square, ramp, noise, and arbitrary
Phase Deviation	0° - 180°
Modulation Frequency	2 mHz - 100 kHz

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PWM	
Carrier Waveform	pulse
Source	internal / external
Modulating Waveform	sine, square, ramp, noise, and arbitrary
Width Deviation	0 ~ minimum (pulse duty ratio, 100% - pulse duty ratio)
Modulating Frequency	2 mHz - 100 kHz
F2k / 3FSK / 4FSK	
Carrier Waveform	sine, square, ramp, and arbitrary (except DC)
Source	internal / external
Modulating Waveform	square with 50% duty cycle
Key Frequency	2 mHz - 1MHz
PSK	
Carrier Waveform	sine, square, ramp, and arbitrary (except DC)
Source	internal / external
Modulating Waveform	square with 50% duty cycle
Key Frequency	2 mHz - 1MHz
OSK	
Carrier Waveform	sine, square, ramp, and arbitrary (except DC)
Source	internal
Oscillation Time	square with 50% duty cycle
Key Frequency	2 mHz - 1MHz
ASK	
Carrier Waveform	sine, square, ramp, and arbitrary (except DC)
Source	internal / external
Modulating Waveform	square with 50% duty cycle
Key Frequency	2 mHz - 1MHz
BPSK	
Carrier Waveform	sine, square, ramp, and arbitrary (except DC)
Source	internal
Modulating Waveform	square with 50% duty cycle
Key Frequency	2 mHz - 1MHz
Sweep	
Carrier Waveform	sine, square, ramp, and arbitrary (except DC)
Type	linear, and log
Sweep Time	1 ms to 500s, ± 0.1%
Trigger Source	internal, external, and manual
Burst	
Carrier Waveform	sine, square, ramp, pulse, and arbitrary (except DC)
Burst Count	1 to 50,000 period, infinite, gating
Internal Period	10 ns - 500 s
Gated Source	external trigger

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Frequency Counter	
Function	frequency period, +width, -width, +duty, and -duty
Frequency Range	100mHz - 200MHz
Frequency Resolution	7 digits
Input / Output	
Display	8” 800 x 600 pixels touch screen LCD
Type	frequency counter, external modulation input, external trigger input, external reference clock input / output
Communication Interface	USB Host, USB Device, and LAN