OWON®

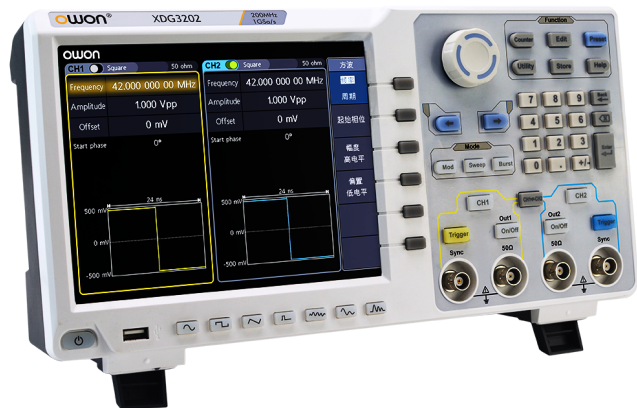# XDG3000 Series Waveform Generator

+ Max 250MHz frequency output
+ Max 1.25GS/s sample rate, and 1µHz frequency resolution
+ Vertical Resolution :14 bits, max 1M arb waveform length
+ Comprehensive waveform output : 6 basic waveforms, and 152 built-in arbitrary waveforms
+ Comprehensive modulation functions : AM, FM, PM, FSK, 3FSK, 4FSK, PSK, OSK, ASK, BPSK, PWM, Sweep, and Burst
+ High-accuracy frequency counter integrated, supported range 100mHz - 200MHz
+ SCPI, and LabVIEW supported
+ 8 inch (800 × 600 pixels) multi-touch screen

+ Performance Specifications

Model	XDG3252	XDG3202	XDG3162	XDG3102	XDG3082
Channel	2				
Frequency Output	250MHz	200MHz	160MHz	100MHz	80MHz
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 150 built-in waveforms, and user-defined arbitrary waveform

Frequency (resolution 1µHz)

Sine	1µHz - 250MHz	1µHz - 200MHz	1µHz - 160MHz	1µHz - 100MHz	1µHz - 80MHz
Square	1µHz - 50MHz			1µHz - 40MHz	1µHz - 30MHz
Pulse	1µHz - 25MHz				
Ramp	1µHz - 5MHz				
Harmonic	1µHz - 125MHz	1µHz - 100MHz	1µHz - 80MHz	1µHz - 50MHz	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

Square

Rise / Fall Time	<5ns
Overshoot	<3%
Duty Cycle	50.0% (fixed)
Jitter (rms)	300ps + 100ppm

Pulse

Pulse Width	12ns - 996875s
Leading/Trailing Edge 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%
Modulating 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°
Modulating Frequency	2 mHz - 100 kHz

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

FSK / 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

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

Specifications subject to change without prior notice.

+ Accessories

The accessories subject to final delivery.

| Power Cord | CD Rom | Manual | USB Cable | Q9 Cable |