

XDG2100 Waveform Generator



- + Max 100MHz frequency output
- + 500MSa/s Sample rate , Vertical resolution 1μHz
- + 14 bits Vertical Resolution , 10 Marb waveform length
- + Comprehensive waveform output : 6 basic waveforms, and 150 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
- + 7 inch (800 × 480 pixels) multi-touch screen, support

+ Performance Specifications

| Model | XDG2100 |
|---------------------|----------|
| Channel | 2 |
| Frequency Output | 100MHz |
| Sample Rate | 500MSa/s |
| Vertical Resolution | 14 bits |

Waveform

| | |
|--------------------|--|
| Standard Waveform | FAR sine, square, pulse, ramp, noise, and harmonic exponential rise, exponential fall, sin(x)/x, step wave, and others, |
| Arbitrary Waveform | total 150 built-in waveforms, and user-defined arbitrary waveform |

Frequency (resolution 1μHz)

| | |
|--------------------|-------------------------|
| Sine | 1μHz-100MHz |
| Square | 1μHz ~ 30MHz |
| Pulse | 1μHz ~ 25MHz |
| Ramp | 1μHz ~ 3MHz |
| Noise | 100MHz (-3dB , typical) |
| Arbitrary Waveform | 1μHz ~15MHz |
| Harmonic | 1μHz ~50MHz |
| Accuracy | ±2ppm, 25°C±5°C |

Sine Wave Spectrum Purity

| | |
|---|--|
| Harmonic Distortion (typical (0dB)) | DC ~ 1MHz : <-65dBc 1MHz ~ 10MHz : <-60dBc 10MHz ~ 60MHz : <-55dBc 60MHz ~ 120MHz : <-50dBc |
| Total Harmonic Distortion | <0.05 % , 10 Hz to 20 kHz, 1 Vpp |
| Spurious (non-harmonic) (typical (0dB)) | ≤10MHz : <-70dBc >10MHz : <-70dBc + 6dB/ octave band |
| Phase Noise (typical (0 dBm, 10 kHz deviation)) | typical (0dBm , 10kHz offset) 1MHz : -110dBc/Hz |

+982165565901

+982144584619

+989034119385

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FGJ-NDT.IR

DIGINDT.IR

Square

| | |
|------------------|---|
| Rise / Fall Time | <8ns |
| Overshoot | < 3% |
| Duty Cycle | 50.0% (fixed) |
| Jitter (rms) | $\leq 5\text{MHz}: <300\text{ps} + 2\text{ppm}; > 5\text{MHz} 300\text{ps}$ |

Pulse

| | |
|------------------|---|
| Period | 40ns ~ 1000000s |
| Pulse Width | $\geq 12\text{ns}$ |
| Rise / Fall Time | $\geq 8\text{ns}$ |
| Overshoot | < 3% |
| Jitter (rms) | $\leq 5\text{MHz}: <300\text{ps} + 2\text{ppm}; > 5\text{MHz} 300\text{ps}$ |
| Duty cycle | 0.1%~99.9% |

Ramp

| | |
|-----------|--|
| Linearity | $\leq 0.5\%$ of peak output (typical, 1kHz, 1 Vpp, 50% symmetry) |
| Symmetry | 0% ~ 100% |

Arbitrary

| | |
|--------------------------------|---|
| Waveform Length | 2 points - 10M points |
| Minimum Rise/Fall Time | <8ns |
| Jitter (rms) (1MHz,1Vpp,50Ω) | $\leq 5\text{MHz}: <300\text{ps} + 2\text{ppm}; > 5\text{MHz} 300\text{ps}$ |

Amplitude

| | |
|---------------------------|--|
| into 50Ω load | 1mVpp ~ 10Vpp ($\leq 25\text{MHz}$) ; 1mVpp ~ 5Vpp ($\leq 60\text{MHz}$) ; 1mVpp ~ 2.5Vpp ($\leq 100\text{MHz}$) ; |
| Resolution | 0.1mVpp or 4digits , (amplitude > 1Vpp : 1mVpp) |
| DC Offset Range (AD+DC) | $\pm 5\text{V}(50\Omega)$, $\pm 10\text{V}(\text{high resistance})$ |
| DC offset resolution | 0.1mV or 4digits |
| Load Impedance | 50Ω (typical) |
| DC offset Accuracy | $\pm(1\%$ of setting + 1 mVpp+ amplitude Vpp * 0.5%) (typical 1kHz sine, 0V offset) |
| Unit | mVpp , Vpp , Vrms , mVrms , dBm |

Modulation

| | |
|------|--|
| Type | AM, DSB- AM, FM, PM, ASK, FSK, PSK, BPSK, QPSK, 3FSK, 4FSK, OSK, PWM, SUM |
|------|--|

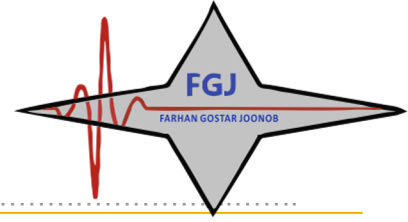
DSB-AM

| | |
|------------------------------|---------------------|
| Carrier Waveform | sine, square, ramp |
| Source | internal / external |
| Internal Modulation Waveform | sine, square, ramp |

AM

| | |
|---------------------|---|
| Carrier Waveform | sine, square, ramp, and arbitrary (except DC) |
| Source | internal / external |
| Modulating Waveform | sine, square, ramp, noise, and arbitrary |
| Depth | 0.0%~120.0% |

| | |
|------------------------------|--|
| Modulating Frequency | 2 mHz ~1MHz |
| 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 ~1MHz |
| 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 |
| 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 |
| FSK/3FSK/4FSK | |
| Carrier Waveform | sine, square, ramp, and arbitrary (except DC) |
| Source | internal |
| 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 |
| BPSK | |
| Carrier Waveform | sine, square, ramp, and arbitrary (except DC) |
| Source | internal |
| 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 |
| Concussion time | 8ns - 249.75s |
| SUM (Dual tone) | |
| Carrier Waveform | sine, square, ramp |
| Source | internal / external |
| Internal Modulation Waveform | sine, square, ramp , white noise, arbitrary waveform |
| Internal am frequency | 2mHz~1MHz |
| Depth | 0.0%~100.0% |



PWM

| | |
|----------------------|--|
| Carrier Waveform | pulse |
| Source | internal / external |
| Modulating Waveform | sine, square, ramp, noise, and arbitrary |
| Width Deviation | 0~99% |
| Modulating Frequency | 2 mHz ~ 1MHz |
| Deviation | 0~min |

Pulse train responses

| | |
|-------------------|---|
| Carrier | Sine , Square , Harmonic , Pulse,Noise and Arbitrary Waveform |
| Carrier frequency | 2mHz ~ BW/2 |
| Type | count (1 to 1000000 cycles), unlimited, gated |
| Internal cycle | 20 ns ~ 500 s |
| Gated Source | external trigger |

Sweep characteristic

| | |
|---------------------------------|---|
| carrier | sine, square, ramp, and arbitrary (except DC) |
| Maximum / termination frequency | sine: 100MHz square: 30MHz ramp: 3MHz arbitrary:15MHz (Built-in) or 25MHz (User defined) |
| Type | linear, logarithmic, step |
| Direction | up / down |
| Scanning time | 1 ms to 500 s ± 0.1% |
| Trigger source | Internal, external, manual |

Frequency Counter

| | |
|----------------------|--|
| Function | Frequency , period, +width, -width, +duty, and -duty |
| Frequency Range | 100mHz ~ 200MHz |
| Frequency Resolution | 7 digits |
| Coupling mode | AC,DC |

Input / Output

| | |
|-------------------------|--|
| Display | 7" 800 x 480 pixels touch screen LCD |
| Input mode | frequency counter, external modulation input, external trigger input, Internal clock output, external reference clock input / output |
| Communication Interface | USB Host, USB Device, LAN , COM |

Mechanical specifications

| | |
|--------|----------------------|
| Size | 340mm x 177mm x 90mm |
| Weight | 2.3kg |