

UTG2062A

Function/Arbitrary Waveform Generator

Key Features:

- 60MHz sine waveform output at 1 μ Hz resolution
- 25MHz pulse waveform output with adjustable rise/fall time
- 250MSa/s sample rate with 14bits resolution
- Dual channels output supporting stand-alone or channel-coupling output mode
- 1M points arbitrary waveform storages with 8 waveforms for non-volatile memory
- Modulation types including: AM,FM,PM,ASK,FSK and PWM
- 4.3" high resolution color TFT display
- Standard ports: USB Host, USB Device and LAN



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Intuitive Operating Interface

UTG2062A function/arbitrary waveform generator relies on direct digital synthesis (DDS) technology to output precise and stable waveforms with remarkable resolution down to 1μHz. Through offering corresponding buttons to accompany the interface menu, it makes any setting very convenient for you to operate. The combination of numeric keypad and the rotary knob offers an extremely easy access to any adjustment of parameters, such as frequency, amplitude, offset, etc. Meanwhile, the rotary knob itself can let you switch into other desired settings right from the current parameters. You can select Vpp, Vrms or dBm as unit after entering voltage value by numeric keypad. You can also set the amplitude using the high level and low level.

Multiple Built-in Functions

UTG2062A provides common signals which coverage most of you needs and stands out among the crowd for its versatile modulation options such as AM, PM, FM, ASK, FSK and PWM. Waveforms can be modulated internally or externally, and its programmable frequency marker allows you to choose linear or logarithmic sweep freely. You can also further customize the signal through the programmable burst cycles and gated function. As for the application system, connection to USB port can initiate the waveform capture, waveform analysis, etc;

Arbitrary Waveform Editing

Arbitrary waveform generator is an innovative idea by combing both computer, software and signal generator techniques into one. When creating the arbitrary waveforms, the software generates waveforms automatically just after inputting the needed point number and the corresponding voltage value. You can also copy and paste certain segment of some waveform to create periodic waveforms of all kinds.

Functional Interface

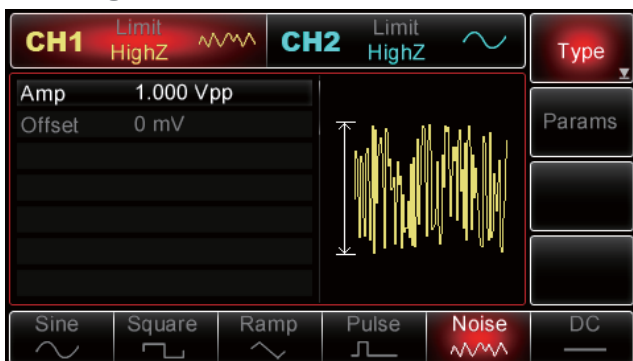
Multiple waveforms selectable from dual channels



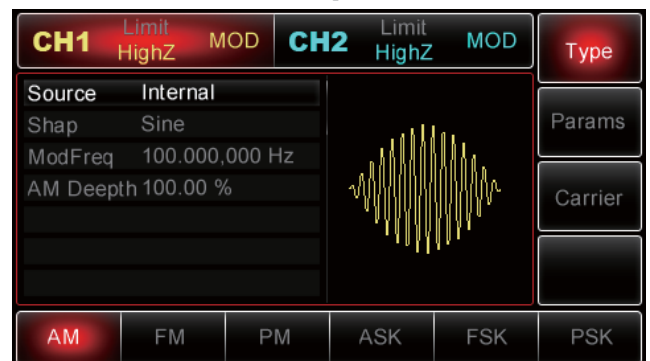
Square wave with 50% duty cycle



Noise signal at 60MHz bandwidth



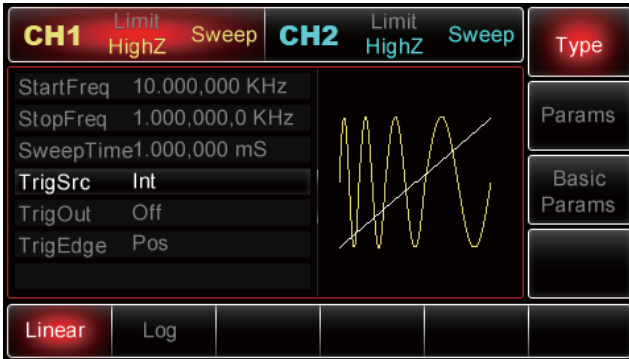
Versatile Modulation Options



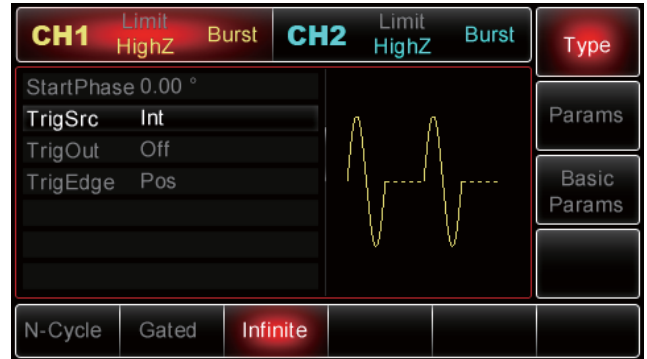
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Function/Arbitrary Waveform Generator

Linear and logarithmic sweep available



Three burst modes for your option



Technical Specifications

General Specifications

| | |
|------------------|---|
| Model | UTG2062A |
| Channels | 2 |
| Max. Frequency | 60MHz |
| Sample Rate | 250MSa/s |
| Waveforms | Sine, Square, Ramp, Pulse, Noise, DC, Arbitrary Waveforms |
| Working Mode | Output Gate, Continuous, Modulate, Frequency Sweep, Burst |
| Modulation Types | AM,FM,PM,ASK,FSK,PSK,PWM |

Waveform Specifications

| ● Sine Wave | | ● Square Wave | |
|------------------------------------|---|--|---|
| Frequency Range | 1μHz~60MHz | Frequency Range | 1μHz~25MHz |
| 0dBm | DC~20kHz -70dBc | Rise/Fall Time | < 13ns(10%~90%) (Typical, 1kHz, 1Vpp) |
| Harmonic Distortion(typical) | 20kHz~100kHz -65dBc | Overshoot(Typical) | < 2% |
| | 100kHz~1MHz -50dBc | Symmetry | 1%+4ns of the period |
| | 1MHz~20MHz -40dBc | (below 50% duty cycle) | Jitter(typical) |
| Total Harmonic Distortion(typical) | 20MHz~60MHz -35dBc | ● Ramp Wave | |
| | DC~20kHz, 1Vpp < 0.2% | Frequency Range | 1μHz~400kHz |
| Non-harmonic spurious(typical) | DC~10MHz, < -70dBc | Nonlinearity | < 0.1% of peak output (Typical, 1kHz, 1Vpp, symmetrical 100%) |
| | 10MHz~60MHz, < -70dBc+6dB/octave | Symmetry | 0.0%~100.0% |
| | 1kHz offset: -105dBc/Hz | ● Gaussian Noise | |
| Phase Noise(typical) | 10kHz offset: -115dBc/Hz | Bandwidth | 60MHz bandwidth(-3dB), typical |
| | 100kHz offset: -125dBc/Hz | ● DC Offset | |
| ● Pulse Wave | | Range(Peak AC+DC) | ±5V(50Ω) ±10V(High resistance) |
| Frequency Range | 500μHz~25MHz | Offset Accuracy | ±(2% of Offset setting+ 0.5% of amplitude +2mV) |
| Pulse Width | 12ns~2000s | | |
| Variable edge time | 10ns~2ms | ● Output Characteristics | |
| Overshoot (Typical) | < 2% | Amplitude range | 1mVpp~10Vpp(50Ω) 2mVpp~20Vpp(high resistance) |
| Jitter | 1ns+100ppm of the period | Accuracy(1kHz sine) | ±(1% of setting value+1mVpp) |
| ● Arbitrary Wave | | Amplitude Flatness | < 100kHz 0.1dB |
| Frequency Range | 1μHz~12MHz | (with reference to 1kHz sine wave, 5Vpp) | 100kHz~5MHz 0.15dB 5MHz~60MHz 0.3dB |
| Waveform Length | 2~1M points | | |
| Vertical Resolution | 14bits(symbols included) | | |
| Sample Rate | 250MSa/s | | |
| Min Fall/Rise Time | 35ns, Typical | | |
| Jitter(RMS)(typical) | 6ns+30ppm | | |
| Nonvolatile Memory | 8 waveforms | | |
| ● Waveform Output | | | |
| Impedance | 50Ω, typical | | |
| Isolation | 42Vpk maximum to earth | | |
| Protection | Short-circuited protection, waveform output disabled automatically when overloaded. | | |

UTG2062A**Function/Arbitrary Waveform Generator****■ Modulation Characteristics**

| | | | |
|--------------------------|--|--------------------------|--|
| ● AM | | ● FM | |
| Carrier Waveforms Source | Sine, Square, Ramp, Arbitrary Internal/External | Carrier Waveforms Source | Sine, Square, Ramp, Arbitrary Internal/External |
| Modulating Waveforms | Sine, Square, Ramp, Noise, Arbitrary | Modulating Waveforms | Sine, Square, Ramp, Noise, Arbitrary |
| Modulating Frequency | 2mHz~20kHz | Modulating Frequency | 2mHz~20kHz |
| Modulation Depth | 0%~120% | Frequency Deviation | 1μHz~20MHz |
| ● PM | | ● ASK | |
| Carrier Waveforms Source | Sine, Square, Ramp, Arbitrary Internal/External | Carrier Waveforms Source | Sine, Square, Ramp, Arbitrary Internal/External |
| Modulating Waveforms | Sine, Square, Ramp, Noise, Arbitrary | Modulating Waveforms | Square waveforms with 50% duty cycle |
| Modulating Frequency | 2mHz~20kHz | Modulating Frequency | 2mHz~100kHz |
| Phase Deviation | 0°~360° | | |
| ● FSK | | ● PWM | |
| Carrier Waveforms Source | Sine, Square, Ramp, Arbitrary Internal/External | Carrier Waveforms Source | Pulse Internal/External |
| Modulating Waveforms | Square waveforms with 50% duty cycle | Modulating Waveforms | Sine, Square, Ramp, Noise, Arbitrary |
| Modulating Frequency | 2mHz~100kHz | Modulating Frequency | 2mHz~20kHz |
| | | Width Deviation | 0%~100% of pulse width |

■ Sweep

| | | | |
|------------------------|--|----------------|----------------------------|
| Carrier Waveforms Type | Sine, Square, Ramp, Arbitrary Linear, Logarithmic | Sweep Time | 1ms~500s±0.1% |
| | | Trigger Source | Manual, External, Internal |

■ Burst

| | | | |
|------------------|---|----------------|----------------------------|
| Waveforms Type | Sine, Square, Ramp, Pulse, Noise, Arbitrary N-Cycle(1~50000cycle), Infinite, Gated | Internal Cycle | 1μs~500s±1% |
| Start/Stop Phase | -360°~+360° | Gate Source | External |
| | | Trigger Source | Manual, External, Internal |

■ Connector on Back Panel

| | | | |
|------------------------------|---|------------------------|------------------------------|
| Modulation Input | ±5Vpk full-scale 5kΩ input impedance | Input/Output Impedance | 2kΩ/50Ω, typical, AC coupled |
| Input/Output Frequency Range | 10MHz±500Hz | Lock Time | <1s |
| Input/Output Level Range | 80mVpp~10Vpp/0dB, (typical) | External Trigger | TTL Compatible |

■ Trigger Input

| | | | |
|-------------|--------------------------|-----------------|-------------------|
| Input Level | TTL Compatible | Input Impedance | >10kΩ, DC-coupled |
| Slope | Rise or Fall, selectable | Linear Sweep | <500μs, Typical |
| Pulse Width | >100ns | Burst Delay | <500ns, Typical |

■ Trigger Output

| | | | |
|-------------|------------------------|------------------|--------------|
| Level | TTL Compatible, to 50Ω | Output Impedance | 50Ω, Typical |
| Pulse Width | >400ns, Typical | Max. Frequency | 1MHz |

■ General Characteristics

| | | | |
|----------------------|---|-------------------|--------------------------------|
| ● Display | | ● Power | |
| Display Type | 4.3 inch color TFT display | Power Supply | 100—240 V AC, 45—440Hz, CAT II |
| Display Resolution | 480 Horizontal × 272 Vertical | Power Dissipation | <50W |
| ● Environment | | Fuse | 2A, T level, 250V |
| Temperature Range | Operating: 10°C~+40°C Non-operating: -20°C~+60°C | | |
| Cooling | Natural cooling | | |
| Humidity | <+35°C: ≤90% RH +35°C~+40°C: ≤60% RH | | |
| Altitude | Operating: <3000m Non-operating: <15000m | | |

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