UTG2000A Series Arbitrary Waveform Generators

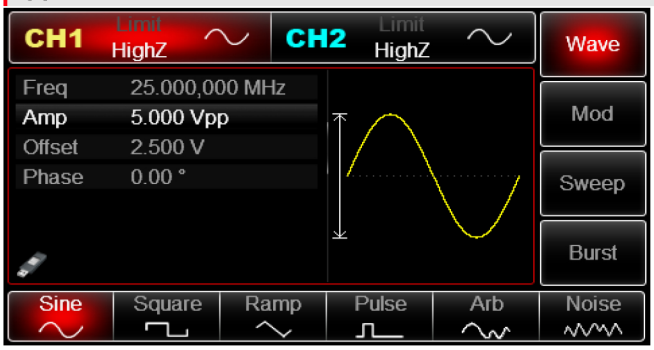
Introduction

UTG2000A series function / arbitrary waveform generator is designed by direct digital frequency synthesis (DDS) technology and can produce accurate, stable and low distortion output signals. The series of instruments 125 MS/s sampling rate, and 14-bit vertical resolution. It has equivalent dual channel independent output,Built-in 200 arbitrary waveforms， Meet the requirements of most applications in basic testing.

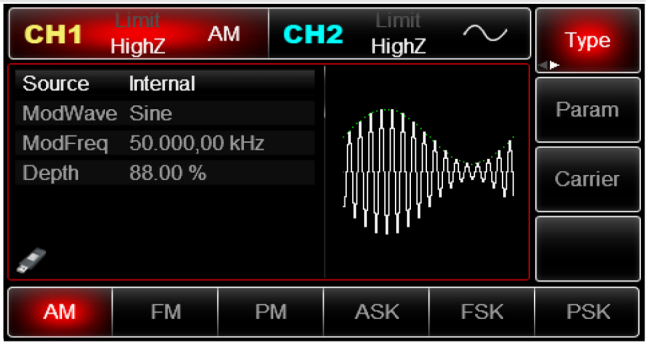
Features

1、25MHz sine waveform output, 1μHz full-band resolution
2、125MSa/s sample rate, 14bit vertical resolution
3、8k points arbitrary waveform storage, Built-in 200 arbitrary waveforms
4、non-volatile waveforms storage
5、Versatile modulation choices: AM,FM,PM,ASK,FSK,PSK,PWM
6、5MHz pulse waveform, adjustable rise/fall time
7、4.3 inch high resolution color TFT display
8、Standard Ports: USB Host, USB Device, LAN(Optional), Frequency Counter

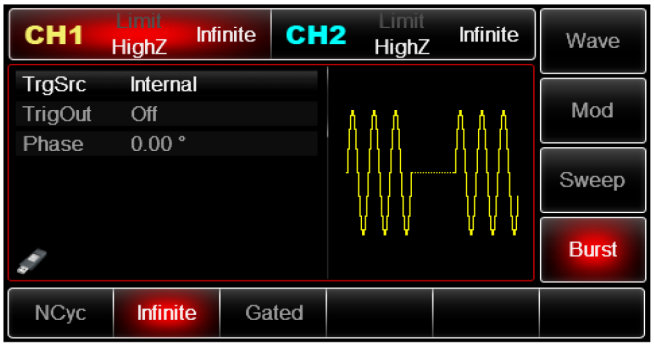
Application features



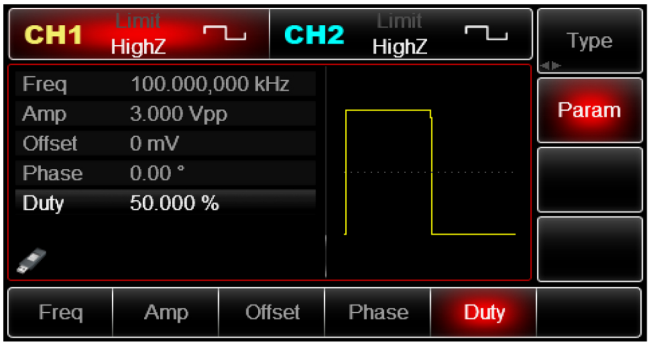
25MHz sine waveform output，Double Channel Multiple Waveform Selection



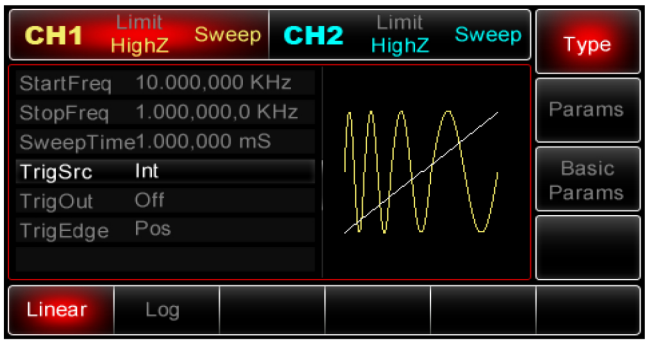
Multiple Analog and Digital Modulation



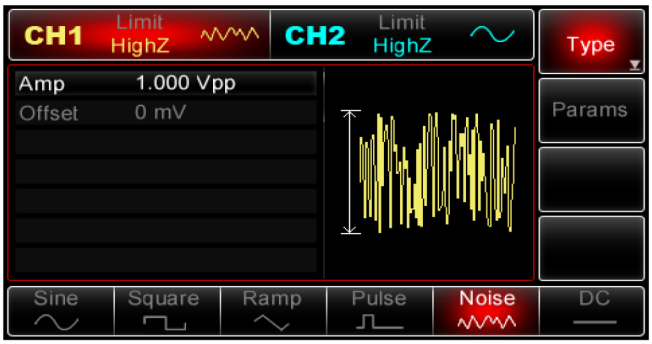
Three burst modes for your option



Square wave with 50% duty cycle



Sweep function and burst mode



Noise signal at 25MHz bandwidth

Technical Specifications		
Model	UTG2025A	
Channels	2	
Max. Frequency	25MHz	
Sample Rate	125MSa/s	
Waveforms	Sine, Square, Ramp, Pulse, Noise, DC, Arbitrary Waveforms	
Working Mode	Output Gate, Continuous, Modulate, Frequency Sweep, Burst	
Modulation Types	UTG2025A	
Waveform Specifications		
Sine Wave		
Frequency Range	1μHz~25MHz	
	DC ~100kHz	-60dBc
	100kHz~1MHz	-50dBc
	1MHz~25MHz	-35dBc
Total Harmonic Distortion(typical)	DC~20kHz, 1Vpp＜0.2%	
Non-harmonic spurious(typical)	DC~1MHz ＜-70dBc	
	1MHz~5MHz ＜-60dBc	
	5MHz~25MHz ＜-50dBc	
	1kHz offset: -105dBc/Hz	
Phase Noise(typical)	10kHz offset: -115dBc/Hz	
	100kHz offset: -125dBc/Hz	
Square Wave		
Frequency Range	1μHz~5MHz	
Rise/Fall Time	＜24ns(10%~90%) (Typical, 1kHz, 1Vpp)	
Overshoot(Typical)	＜2%	
Symmetry (below 50% duty cycle)	1%+4ns of the period	
Jitter(typical)	1ns+100ppm of the period	
Ramp Wave		
Frequency Range	1μHz~400kHz	
Nonlinearity	＜0.1% of peak output	
	(Typical, 1kHz, 1Vpp, symmetrical 100%)	
Symmetry	0.0%~100.0%	
Pulse Wave		
Frequency Range	500μHz~5MHz	
Pulse Width	40ns~2000s	
Variable Edge Time	10ns~2ms	
Overshoot (Typical)	＜2%	
Jitter	1ns+100ppm of the period	
Gaussian Noise		
Bandwidth	25MHz bandwidth(-3dB), typical	
DC Offset		
Range(Peak AC+DC)	±5V(50Ω)	
	±10V (High resistance)	
Offset Accuracy	±(2% of Offset setting+ 0.5% of amplitude +5mV)	
Arbitrary Wave		
Frequency Range	1μHz~5MHz	

Waveform Length	2~8k points
Vertical Resolution	14bits(symbols included)
Sample Rate	125MSa/s
Min Fall/Rise Time	35ns, Typical
Jitter(RMS)(typical)	15ns+100ppm
Nonvolatile Memory	48 waveforms
Output Characteristics	
Amplitude Range	1mVpp~10Vpp(50Ω)
	2mVpp~20Vpp(high resistance)
Accuracy(1kHz sine)	±(1% of setting value+2mVpp)
Amplitude Flatness	< 100kHz 0.1dB
(with reference to 1kHz sine wave, 5Vpp)	100kHz~25MHz 0.2dB
Waveform Output	
Impedance	50Ω, typical
Isolation	42Vpk maximum to earth
Protection	Short-circuited protection
Modulation Characteristics	
AM	
Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal/External
Modulating Waveforms	Sine, Square, Ramp, Noise, Arbitrary
Modulating Frequency	2mHz~50kHz
Modulation Depth	0%~120%
FM	
Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal/External
Modulating Waveforms	Sine,Square, Ramp, Noise, Arbitrary
Modulating Frequency	2mHz~50kHz
Frequency Deviation	1μHz~12.5MHz
PM	
Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal/External
Modulating Waveforms	Sine,Square, Ramp, Noise, Arbitrary
Modulating Frequency	2mHz~50kHz
Phase Deviation	0°~360°
ASK	
Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal/External
Modulating Waveforms	Square waveforms with 50% duty cycle
Modulating Frequency	2mHz~100kHz
FSK	
Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal/External
Modulating Waveforms	Square waveforms with 50% duty cycle
Modulating Frequency	2mHz~100kHz
PSK	
Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal/External
Modulating Waveforms	Square waveforms with 50% duty cycle
Modulating Frequency	2mHz~100kHz
PWM	
Carrier Waveforms	Pulse
Source	Internal/External
Modulating Waveforms	Sine, Square, Ramp, Noise, Arbitrary
Modulating Frequency	2mHz~50kHz
Width Deviation	0%~49.9% of pulse width
Sweep	
Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Type	Linear, Logarithmic
Sweep Time	1ms~500s±0.1%

Trigger Source	Manual, External, Internal	
Burst		
Waveforms	Sine, Square, Ramp, Pulse, Noise, Arbitrary	
Type	N-Cycle(1~50000cycle),Infinite, Gated	
Start/Stop Phase	-360°~ +360°	
Internal Cycle	1μs~500s±1%	
Gate Source	External	
Trigger Source	Manual, External, Internal	
Connector on Back Panel		
Modulation Input		
External AM Modulation	±5Vpk full-scale	
	20kΩ input impedance	
Lock Time	< 2s	
External Trigger	TTL Compatible	
10MHz Input		
Level	TTL Compatible, to 50Ω	
Input Frequency	10MHz±500Hz	
Input Impedance	10kΩ, Typical	
Coupling	DC	
10MHz Output		
Level	TTL Compatible, to 50Ω	
Input Frequency	10MHz±500Hz	
Input Impedance	50Ω, Typical	
Coupling	DC	
Frequency Counter		
Level	TTL Compatible	
Input Frequency	100mHz～200MHz	
Accuracy	±51ppm	
Frequency Resolution	6 bit/s	
Coupling	AC、DC	
Trigger Input		
Input Level	TTL Compatible	
Slope	Rise or Fall, selectable	
Pulse Width	> 100ns	
Input Impedance	> 10kΩ，DC-coupled	
Reaction Time	Sweep： < 500μs, Typical	
	Burst： < 500ns, Typical	
Trigger Output		
Level	TTL Compatible, to 50Ω	
Pulse Width	> 400ns, Typical	
Output Impedance	50Ω, Typical	
Max. Frequency	1MHz	
Waveform Specifications		
Display Type	4.3inch color TFT display，480 Horizontal × 272Vertical（Display Resolution）	
Power Supply	100～240 VAC, 50Hz/60Hz ， Power Dissipation < 40W	
Fuse	2A, T level, 250V	
Environment		
Temperature Range	Operating: 10℃～+40℃	
	Non-operating: -20℃～+60℃	
Cooling	Natural cooling	
Humidity	< +35℃: ≤90% RH	
	+35℃～+40℃: ≤60% RH	
Altitude	Operating: < 3000m	
	Sine, Square, Ramp, Arbitrary	
Ordering Information		
UTG2000A Series	UTG2025A(25MHz，125MSa/s，8Kpts，2-Channel)	UTG2025A
Standard Accessories	Power cord conforming to the standard of the destination country	/
	USB interface cable	/
	2 BNC cables（1M）	/

Para mayor información puede consultar el manual de usuario dando clic en el siguiente enlace:
http://unitrend.oss-cn-hongkong.aliyuncs.com/upload/file/20210529/UTG2000A%20Operating%20Manual.pdf

http://en-uni.ayunlian.com/