UTG1000A Series Arbitrary Waveform Generators

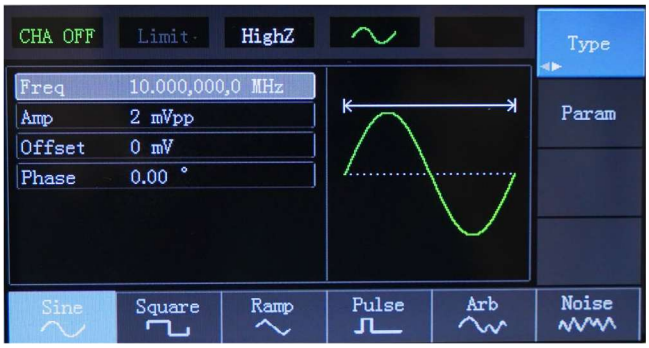
Introduction

UTG1000A function/arbitrary waveform generators adopt direct digital synthesis technology to produce accurate and stable waveform output with 1μHz resolution. Modulations such as AM, PM, FM, ASK, FSK etc. with internal or external source, linear and logarithmic sweeps and USB interface are available. The panel is ergonomically constructed for simple operation.

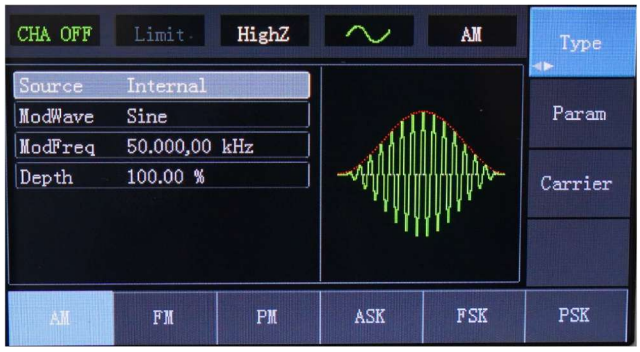
Features

- 5/10MHz sine waveform output, 1μHz full-band resolution
- 125MSa/s sample rate, 14bit vertical resolution
- Single channel
- Versatile modulation choices: AM,FM,PM,ASK,FSK,PWM
- 6 non-volatile waveform stores
- 4.3 inch high resolution color TFT display

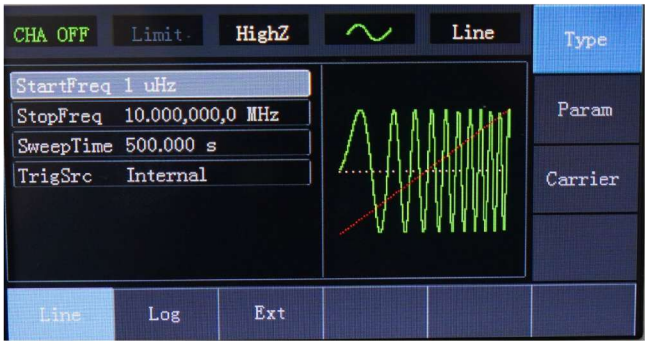
Design Features



Single Channel， Multiple basic waveform options



Various modulation functions



Linear and logarithmic scan signal

Built in a variety of arbitrary waveform

Technical Specifications

MODEL	**UTG1005A**	**UTG1010A**
Channel	1	
Channel Bandwidth	5MHz	10MHz
Sampling Rate	125MS/s	
Vertical Resolution	14bits	
Waveform	Sine , square , triangle , pulse , oblique , noise, arbitrary wave (16 groups)	
Scan Mode	Linear, logarithmic and external scanning	
Modulation Type	AM、FM、PM、ASK、FSK、PSK、PWM	
Output Characteristic		
Output Impedance	50Ω/ high resistance	
Amplitude Range	1mVpp ~ 10Vpp (50Ω)	1mVpp ~ 10Vpp (50Ω)
	2mVpp-20Vpp	2mVpp ~ 20Vpp (high resistance)
Accuracy (1kHz Sine wave)	Amplitude setting value of 1% + 2 mV	
DC Offset Range	-5Vpp ~ 5Vpp(50Ω) (AC+DC)	
	-10Vpp ~ 10Vpp(high resistance)(AC+DC)	
Offset Precision	Offset set value of + 1% + Amplitude set value of 0.5% + 2 mV	
Amplitude Resolution	1mV	
Amplitude Flatness	< 100kHz 0.1dB	
	100kHz ~ 10MHz 0.2dB	
Frequency Characteristic		
Sine Wave		
Frequency Range	1μHz ~ 5MHz	1μHz ~ 10MHz
Resolution	1μHz	
Harmonic Distortion	Test condition : Output Power 0dBm	
(Typical Value)	DC ~ 20kHz -55dBc	
	20kHz ~ 1MHz -50dBc	
	1MHz ~ 10MHz -40dBc	
Harmonic Distortion (Typical Value)	DC ~ 20kHz, 1Vpp < 0.2%	
Square Wave / Pulse Wave		
Frequency Range	1μHz ~ 5MHz	1μHz ~ 5MHz
Resolution	1μHz	
Rise / fall Time	< 24ns (Typical value 1kHz, 1Vpp)	
Overshoot (Typical Value)	< 2%	
Duty Cycle	0.01% ~ 99.99%	
Minimum Pulse Width	≥80ns	
Jitter (Typical Value)	1ns+ period * 100ppm	
Triangular Wave / Oblique Wave		
Frequency Range	1μHz ~ 400kHz	
Frequency Range Resolution	1μHz	
Nonlinearity	1%±2 mV (typical value :1kHz,1Vpp; symmetry:50%)	
Oblique Wave Symmetry	0.0%-100.0%	
Minimum Edge Time	≥400ns	
Arbitrary Wave		
Arbitrary Wave	frequency range :1μHz~ 1 MHz	frequency range:1μHz~ 2 MHz
	Internal storage (fixed):16 group	
	AbsSine,AmpALTAttALT,Gaussian,Monopulse,GaussPulse,SineVer,StairUd,Trapezia,LogNormal,Sinc, ECG,EEG,exponential rise,exponential decline,Lorentz,D-Lorentz	
Modulation Types		
AM		
Carrier Wave	Sine wave, Square wave , Oblique wave, Arbitrary wave	
Source	Internal / external (front panel BNC)	
Modulated Wave	Sine, Square wave , rising oblique wave, falling oblique wave, noise, Arbitrary wave	
Modulation Frequency	2mHz ~ 50kHz	
Modulation Depth	0% ~ 120%	
FM		
Carrier Wave	Sine wave, Square wave , Oblique wave, Arbitrary wave	
Source	Internal / external (front panel BNC)	
Modulated Wave	Sine, Square wave , rising oblique wave, falling oblique wave, noise, Arbitrary wave	

Modulated Frequency	2mHz ~ 50kHz	
Frequency Offset	2.5MHz(Max)	5MHz(Max)
PM		
Carrier Wave	Sine wave, Square wave , Oblique wave, Arbitrary wave	
Source	Internal / external (front panel BNC)	
Modulated Wave	Sine, Square wave , rising oblique wave, falling oblique wave, noise, Arbitrary wave	
Modulated Frequency	2mHz ~ 50kHz	
Phase Offset	0°~ 360°	
ASK		
Carrier Wave	Sine wave, Square wave , Oblique wave, Arbitrary wave	
Source	Internal / external (front panel BNC)	
Modulated Wave	50% duty cycle of Square wave	
Modulated Frequency	2mHz ~ 100kHz	
FSK		
Carrier Wave	Sine wave, Square wave , Oblique wave, Arbitrary wave	
Source	Internal / external (front panel BNC)	
Modulated Wave	50% duty cycle of Square wave	
Modulated Frequency	2mHz ~ 100kHz	
PSK		
Carrier Wave	Sine wave, Square wave , Oblique wave, Arbitrary wave	
Source	Internal / external (front panel BNC)	
Modulated Wave	50% duty cycle of Square wave	
Modulated Frequency	2mHz ~ 100kHz	
PWM		
Carrier Wave	Pulse wave	
Source	Internal / external (front panel BNC)	
Modulated Wave	Sine, Square wave , rising oblique wave, falling oblique wave, noise, Arbitrary wave	
Modulated Frequency	2mHz ~ 20kHz	
Width Offset	0%~49.99% of Pulse width	
Sweep frequency		
Carrier Wave	Sine, Square wave , oblique wave	
Type	Linear and logarithmic	
Scan time	1ms ~ 500s±0.1%	
Trigger Source	Manual, internal and external	
Frequency meter		
Input Level	Compatible with TTL	
Input Frequency	100mHz ~ 100MHz	
Frequency Resolution	6Bit / second	
Coupling Mode	DC	
Interface		
Standard	USB Device	
Display		
Display Type	4.3 inches TFT, LCD	
Display Resolution	WVGA(480×272)	
Display Language	Only support two languages, default: Chinese / English	
Power Source		
Power Voltage	100V ~ 240VACrms，50Hz/60Hz	
Power Consumption	Less than 25W	
Fuse	2A，T class，250V	
Environment		
Temperature Range	operation：10℃~+40℃	
	Non operation：-20℃~+60℃	
Cooling Method	Cooling by fan	

Humidity Range	Less than +35℃：≤90% relative humidity	
	+35℃~+40℃：≤60% relative humidity	
Altitude	operation : less than 2,000 metre	
	Non operation : less than 15,000 metre	
Size (W×H×D)	265mm×110mm×320mm	
Net Weight	3.1 Kg	
Gross Weight	4.1 Kg	
Ordering Information		
UTG1000A Series	UTG1010A(10MHz，125MSa/s，2-Channel，)	UTG1010A
	UTG1005A (5MHz，125MSa/s，2-Channel，)	UTG1005A
Standard Accessories	Power cord conforming to the standard of the destination country	/
	USB interface cable	/
	1 BNC cables（1M）	UT-L45