UTG900E Series Function Arbitrary Waveform Generators


● **Introduction**

UTG900 series function arbitrary waveform generator uses direct digital synthesis technology to produce accurate and stable waveform output, as low as 1μhz resolution, is a handheld mini economy, high performance, multi-function arbitrary waveform generator. Can generate accurate, stable, pure, low distortion output signal, easy to operate, superior technical indicators and humanized graphic display, is a multi-purpose equipment to meet the needs of learning, testing, improve work efficiency.

● **Features**

●30/60MHz sine waveform output, 1μHz full-band resolution
●200MSa/s sample rate, 14bit vertical resolution，Double channel
●portable handheld mini signal generator
●High-accuracy, broad-band 6 bit frequency counter, range: 100mHz~100MHz
●Easy to use modulation type: AM,FM,PM,FSK
●24 non-volatile waveform stores
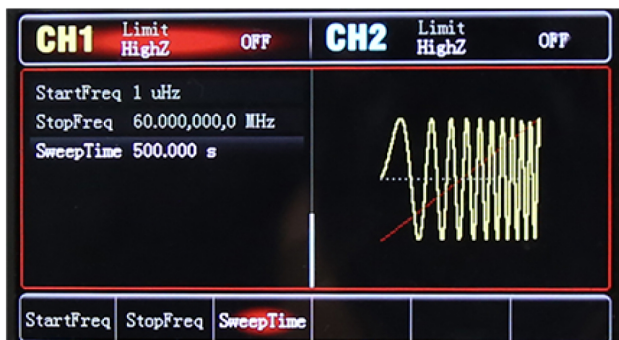●4.3 inches high resolution color TFT display

Design Features
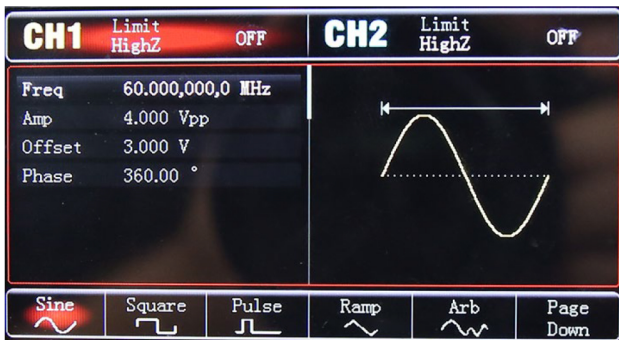
Double Channel，Multiple basic waveform options
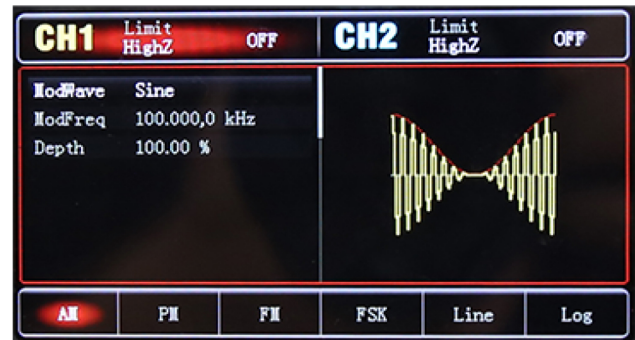
24 Select Arbitrary Wave

Linear and logarithmic scan signal

Easy to use modulation type

Technical Specifications

Model	UTG932E	UTG962E
Channel	2	
Max frequency	30MHz	60MHz
Sampling rate	200MSa/s	
Waveform	Sine wave, square wave, ramp wave, pulse wave, noise, DC, arbitrary wave	
Working modes	Output gating, continuous, modulation, frequency sweep	
Modulation types	AM, FM, PM, FSK, Line, Log	

Frequency characteristic

Sine wave

Frequency range	1μHz~30MHz	1μHz~60MHz
Resolution	1μHz	
Accuracy	within 90 days: ±50ppm, within 1 year: ±100ppm (18°C-28°C)	
Harmonic distortion(typical value)	Test condition: output frequency 0dBm	
	DC~5MHz	-60dBc
	5MHz ~30MHz	-50dBc
	30MHz ~60MHz	-40dBc
THD(typical value)	<0.2%(DC~20kHz, 1Vpp)	
Spurious signal (non-harmonic wave, typical value)	test condition: output power 0dBm	
	DC~10MHz, <-70dBc	
	> 10MHz < -70dBc+6dB/octave	
Phase noise (typical value)	10 MHz: ≤ -125dBc/Hz (typical, 0dBm, 10kHz deviation)	

Square wave

Frequency range	1μHz~15MHz	1μHz~20MHz
Resolution	1μHz	
Rise/fall time	<16ns (typical value, 1kHz, 1Vpp)	
Overshoot(typical value)	<2%	
Duty ratio	0.01%~99.99% (limited by current frequency)	
Symmetry	1ns + 100ppm of period	
(50% duty ratio)		
Shake (typical value)	Typical value (1MHz, 1Vpp, 50Ω)	
	≤5MHz: 2ppm+200ps	
	>5MHz: 200ps	

Ramp wave

Frequency	1μHz~400kHz	1μHz~400kMHz
Resolution	1μHz	
Nonlinearity	3%±2mV (typical value, 1kHz, 1Vpp, symmetry 50%)	
Symmetry	0.0% ~ 100.0%	

Pulse wave

Frequency	1μHz~15MHz	1μHz~20MHz
Resolution	1μHz	
Pulse width	≥80ns	
Variable edge	15ns~8s	15ns~8s
Overshoot	<2% (typical value 1Vpp)	
Shake	150ps	

Gauss noise

Bandwidth	30MHz(-3dB) (typical value)	60MHz(-3dB，typical value)

DC offset

Range (peak AC+DC)	±5V(50Ω)	
	±10V (high resistance)	
Offset accuracy	±3% of offset set value ± 6% of amplitude value ±2mV	

Arbitrary wave characteristics

Frequency range	1μHz~10MHz	1μHz~10MHz
Resolution	1μHz	
Wave length	4kpts	
Vertical resolution	14bits (symbol included)	
Sampling rage	200MSa/s	
Minimum rising/falling time	< 20ns typical value	< 20ns typical value
Shake	5ns±150ps	

Nonvolatile storage	24 waveforms

Output characteristics

Amplitude range	≤10MHz: 1mVpp~10Vpp; (50Ω)
	≤60MHz: 1mVpp~5Vpp; (50Ω)
Accuracy (1kH zsine wave)	±(3% of set value+2mVpp)
Amplitude flatness (equal to 1kHz sine wave, 1Vpp/50Ω)	Test condition: typical value (sine wave,2.0Vpp)
	≤100MHz: ±0.1dB
	≤60MHz: ±0.3dB

Waveform output

Impedance	50Ω typical value
Insulation	Maximum 42Vpk to ground wire
Protection	Channel protection

Modulation types

AM modulation

Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave
Source	Internal
Modulation wave	Sine wave, square wave, ramp wave, noise, arbitrary wave
Modulation frequency	2mHz~200kHz
Modulation depth	0%~120%

FM modulation

Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave	
Modulation wave	Sine wave, square wave, ramp wave, noise, arbitrary wave	
Modulation frequency	1µHz~200kHz	
Frequency deviation	DC~15MHz	DC~30MHz

PM modulation

Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave
Modulation wave	Sine wave, square wave, ramp wave, noise, arbitrary wave
Modulation frequency	2mHz~200kHz
Phase deviation	0°~360°

FSK modulation

Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave
Source	Internal/external
Modulation wave	Square wave (Duty ratio 50%)
Rate	2mHz~100kHz

Frequency sweep

Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave
Type	Linear or logarithmic
Frequency sweep time	1ms~500s ± 0.1%

Sync signal

Output level	TTL compatible
Output frequency	1µHz~2MHz
Output frequency	50Ω, typical value
Coupled mode	DC

Trigger input

Input level	TTL compatible
Input impedance	> 10kΩ, DC coupling

Frequency counter

Input level	TTL compatible
Range of input frequency	100mHz~100MHz
Accuracy	±51ppm
Frequency resolution	7 digit
Coupled mode	DC

General technical specifications

Display type	4.3 inches TFT LCD
Resolution	480×272
Power supply	DC5V, 2A
Power consumption	Less than 10W
Temperature range	Operating: 10℃~+40℃
	Non-operating: -20℃~+60℃

Cooling method	Natural cooling	
Humidity range	Below +35°C: ≤90% relative humidity	
	+35°C~+40°C: ≤60% relative humidity	
Altitude	Operating below 2,000m	
	Non-operating below 15,000m	
Dimensions	172mm×90mm×68mm	
Net weight	0.33kg	
Rough weight	0.77kg	
Ordering Information		
UTG900E Series	UTG962E(60MHz，200MS/s，2-Channel)	UTG962E
	UTG932E (30MHz，200MS/s，2-Channel)	UTG932E
Standard Accessories	Power cord conforming to the standard of the destination country	/
	USB interface cable	UT-D14
	1 BNC-alligator clip cable	UT-L02
	1 BNC cables（1M）	UT-L45