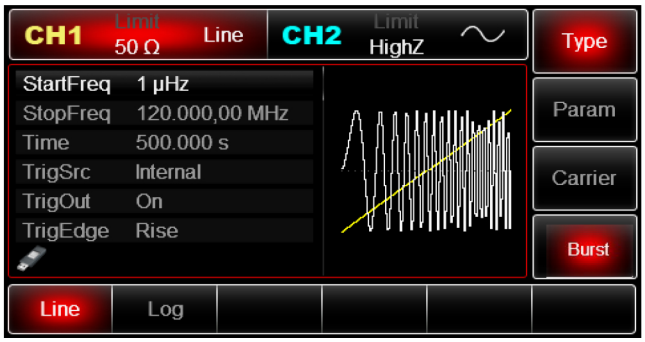
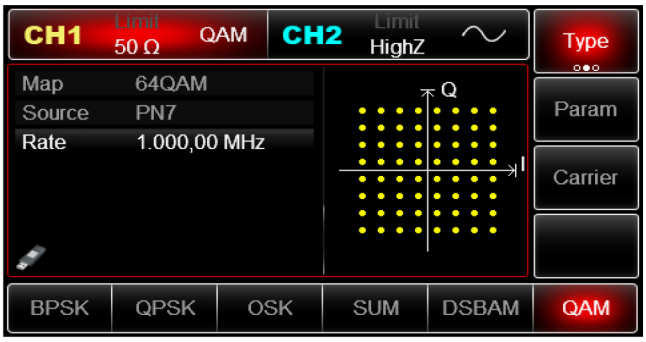


Sweep function and burst mode



Multiple Analog and Digital Modulation

Technical Specifications

Model	UTG2062B	UTG2082B	UTG2122B
Channel	Dual channel		
Max Frequency	60MHz	80MHz	120MHz
Sampling Rate	1.28GSa/s (320MSa/s ,4 times interpolation)		
Waveform	Sine, Square, Ramp, Burst, Noise, DC, Arbitrary, Harmonic, Expression		
Working Modes	Output gating, Continuous, Modulation, Frequency sweep, Burst		
Modulation Types	AM、FM、PM、ASK、FSK、PSK、BPSK、QPSK、OSK、SUM、DSB-AM、QAM、PWM		
Frequency Characteristic			
Sine Wave			
Frequency Range	1μHz~60MHz	1uHz~80MHz	1uHz~120MHz
Resolution	1μHz		
Accuracy	within 90 days ±50ppm,within 1 year±100ppm (18°C~28°C)		
Harmonic Distortion	Test Condition: output frequency 0dBm		
(Typical)	DC~1MHz	-60dBc	
	1MHz ~10MHz	-55dBc	
	10MHz ~40MHz	-50dBc	
	40MHz ~80MHz	-45dBc	
	80MHz ~120MHz	-40dBc	
THD (Typical)	<0.2%(DC~20kHz,1Vpp)		
Spurious Signal	Typical (0dBm)		
(Non-harmonic)	DC~10MHz,<-70dBc		
	> 10MHz: <-70dBc+6dB/ octave		
Phase Noise(Typical)	10 MHz: ≤-125 dBc/Hz(typical,0dBm,10kHz deviation)		
Square Wave			
Frequency Range	1μHz~60MHz	1μHz~70MHz	1μHz~80MHz
Resolution	1μHz		
Rise/Fall time	<4ns(Typical,1kHz,1Vpp)		
Overshoot	<2% (Typical)		
Duty Ratio	0.001%~99.999%		
Symmetry (Duty Ratio=50%)	1% of period + 4ns		
Jitter	Typical(1MHz,1Vpp,50Ω)		
	≤5MHz: 2ppm + 200ps		
	>5MHz: 200ps		
Ramp Wave			
Frequency	1μHz~3MHz	1μHz~4MHz	1μHz~5MHz
Resolution	1μHz		
Nonlinearity	< 1% of peak output(Typical,1kHz,1Vpp ,symmetry 100%)		
Symmetry	0.0% ~ 100.0%		
Impulse Wave			
Frequency	1μHz~20MHz	1μHz~25MHz	1μHz~30MHz
Resolution	1μHz		
Pulse Width	≥16ns		
Variable Edge	9ns~10s	8ns~10s	7ns~10s
Overshoot	<2% (Typical 1Vpp)		
Jitter	150ps		

Gauss noise			
Bandwidth	60MHz(-3dB)(Typical)	80MHz(-3dB)(Typical)	60MHz(-3dB)(Typical)
DC Offset			
Range(Peak AC+DC)	±5V(50Ω)		
	±10V (High Resistance)		
Offset Accuracy	±(1%+2mV)		
Arbitrary Wave			
Frequency	1μHz~15MHz	1μHz~20MHz	1μHz~25MHz
Resolution	1μHz		
Max. Wave Length	8pts~16Mpts		
Vertical Resolution	16bits(Symbol included)		
Sampling Rage	1.28GS/s(Interpolation),320MS/s (DDS mode)		
Rising/Falling Time (Typical)	< 7ns	< 6ns	< 5ns
Jitter	150ps (Play Mode)		
Nonvolatile Storage	160 waves		
Output			
Amplitude	≤20MHz: 1mVpp~10Vpp;(50Ω)		
	≤60MHz: 1mVpp~5Vpp;(50Ω)		
	≤120MHz: 1mVpp~2Vpp;(50Ω)		
Accuracy	±(1% of set value+1mVpp)		
(1kHz sine wave)			
Amplitude Flatness	Test Condition: Typical (Sine Wave,2.0Vpp)		
(Equal to 1kHz sine wave,	≤10MHz: ±0.1dB		
1Vpp/50Ω)	≤60MHz: ±0.2dB		
	≤80MHz: ±0.4dB		
	≤120MHz: ±0.8dB		
waveform Output			
Impedance	50Ω (Typical)		
Insulation	Maximum 42Vpk to ground wire		
Protection	Channel Protection		
Modulation Types			
AM			
Carrier Wave	Sine Wave, Square Wave, Ramp Wave, Arbitrary Wave		
Source	Internal/External		
Modulation Wave	Sine Wave, Square Wave, Ramp Wave, Noise, Arbitrary Wave		
Modulation Frequency	2mHz~1MHz		
Modulation Depth	0%~120%		
FM			
Carrier Wave	Sine Wave, Square Wave, Ramp Wave, Arbitrary Wave		
Source	Internal/External		
Modulation Wave	Sine Wave, Square Wave, Ramp Wave, Noise, Arbitrary Wave		
Modulation Frequency	2mHz~1MHz		
Frequency Deviation	DC ~30MHz	DC ~40MHz	DC ~60MHz
PM			
Carrier Wave	Sine Wave, Square Wave, Ramp Wave, Arbitrary Wave		
Source	Internal/External		
Modulation Wave	Sine Wave, Square Wave, Ramp Wave, Noise, Arbitrary Wave		
Modulation Frequency	2mHz~1MHz		
Phase Deviation	0°~360°		
ASK			
Carrier Wave	Sine Wave, Square Wave, Ramp Wave, Arbitrary Wave		
Source	Internal/External		
Modulation Wave	Square Wave (Duty ratio 50%)		
Modulation Frequency	2mHz~1MHz		
FSK			
Carrier Wave	Sine Wave, Square Wave, Ramp Wave, Arbitrary Wave		
Source	Internal/External		
Modulation Wave	Square Wave (Duty Ratio 50%)		
Modulation Frequency	2mHz~1MHz		
BPSK			
Carrier Wave	Sine Wave, Square Wave, Ramp Wave, Arbitrary Wave		

Source	Internal/External
Modulation Wave	Square Wave (Duty Ratio 50%)
Modulation Frequency	2mHz~1MHz
QPSK	
Carrier Wave	Sine Wave, Square Wave, Ramp Wave, Arbitrary Wave
Source	PN7,PN9,PN11,PN15,PN17,PN21,PN23,PN25
Modulation Wave	Square Wave (Duty Ratio 50%)
Modulation Frequency	2mHz ~ 1MHz
OSK	
Carrier Wave	Sine Wave
Source	Internal/External
Oscillation Time	8ns~200s
Keying Frequency	2mHz ~ 1MHz
SUM	
Carrier Wave	Sine Wave, Square Wave, Ramp Wave, Noise Wave, Arbitrary Wave
Source	Internal/External
Modulation Wave	Sine Wave, Square Wave, Ramp Wave, Noise Wave, Arbitrary Wave
Modulation Frequency	2mHz ~ 1MHz (Internal)； DC ~ 20kHz (External)
QAM	
QAM Mode	QAM4,QAM8,QAM16,QAM32,QAM64,QAM128,QAM256(Built-in constellation modulation)
Modulation Source	PN7,PN9,PN11,PN15,PN17,PN21,PN23,PN25
Chip Rate	2mHz~1MHz
Amplitude	10mVpp~10Vpp(50Ω)
PWM	
Carrier Wave	Pulse
Source	Internal/External
Modulation Wave	Sine Wave, Square Wave, Ramp Wave, Noise, Arbitrary Wave
Modulation Frequency	2mHz ~ 1MHz
Width Deviation	0%~49.99% of pulse width
Frequency Sweep	
Carrier Wave	Sine Wave, Square Wave, Ramp Wave, Arbitrary Wave
Type	Linear or Logarithmic
Frequency Sweep Time	1ms ~ 500s ± 0.1%
Trigger Source	Manual, External or Internal
Burst	
Waveform	Sine Wave, Square Wave, Ramp Wave, Noise, Arbitrary Wave
Type	Count(1~1,000,000 periods), infinite, gated
Start/Stop Phase	0°~ + 360°
Internal Cycle	1μs ~ 500 s ± 1%
Gated Source	External trigger
Trigger Source	Manual, External or Internal
Sync Signal	
Output Level	TTL
Output Frequency	1μHz~10MHz
Output Frequency	50Ω (Typical)
Coupled Mode	DC
Rear Panel Connector	
External Analog Modulation Input	±5Vpk of full range
	>5kΩ input impedance
10MHz Input/Output Frequency	10MHz±50Hz
10MHz Input/Output Level	TTL
10MHz Input/Output Impedance	10kΩ(Input)、50Ω(Output) (Typical)
Locking Time	<1s(Typical)
External trigger	TTL
Trigger Input	
Input Level	TTL compatible
Slope	Rising or Falling, Optional
Pulse Width	> 100 ns
Input Impedance	> 10kΩ,DC coupling
Response Time	Frequency Sweep： < 500μs(Typical)
	Pulse Train： < 500ns(Typical)

Trigger output		
Level	TTL Compatible	
Pulse Width	> 400ns(Typical)	
Output Impedance	50Ω(Typical)	
Maximum Frequency	1MHz	
Frequency Meter		
Input Level	TTL Compatible	
Range of Input Frequency	100mHz~200MHz	
Accuracy	±51ppm	
Frequency Resolution	6 digit/s	
Coupled Mode	DC	
General Technical Specifications		
Display		
LCD	4.3 inches TFT	
Resolution	480×272	
Power Supply		
Power Supply	100~240 VAC,45~440Hz,CAT II	
Power Consumption	Less than 50W	
Fuse	2A,Class T,250V	
Environment		
Temperature Range	Operating：10℃~+40℃	
	Non-operating：-20℃~+60℃	
Cooling Method	Forced fan cooling	
Humidity Range	Below +35℃：≤90% relative humidity	
	+35℃ ~+40℃：≤60%relative humidity	
Altitude	Operating below 2,000m℃	
	Non-operating below 15,000m	
Mechanical Specification		
Dimensions(W×H×D)	305mm×230mm×93mm	
Net Weight	3.10 kg	
Rough Weight	4.10 kg	
Ordering Information		
UTG2000B Series	UTG2122B(120MHz，320MSa/s，16Mpts，2-Channel)	UTG2122B
	UTG2082B(80MHz，320MSa/s，16Mpts，2-Channel)	UTG2082B
	UTG2062B(60MHz，320MSa/s，16Mpts，2-Channel)	UTG2062B
Standard Accessories	Power cord conforming to the standard of the destination country	/
	USB interface cable	/
	2 BNC cables（1M）	/
Optional accessory	Power output module	/