GW Models	AFG-4125E	AFG-4125AE	AFG-4225E	AFG-4235	AFG-4260	AFG-4280	AFG-4210H	AFG-4225H
Channels								
	1		2					
Waveforms								
	Sine, Square, Triangle, Pulse, Noise, Harmonic, ARB							
Arbitrary Functions								
ARB function	Built-in							
Sample Rate (user-editable sampling rate range from 2µSa/s to 62.5MSa/s)	125MSa/s		500MSa/s					1.25GSa/s
Repetition Rate (Arbitrary wave)	15 MHz		30MHz					
Waveform Length	2 to 16K points		2 to 10M points					
Amplitude Resolution	14 bits		16bits					
Minimum rise and fall time	< 10 ns		< 8ns					< 5ns
Jitter	8ns							
Non-Volatile Memory	32MB							
User-defined output section	From point 2~16384		From point 2~10,240,000					
User-defined output marker section	From point2~16384		From point 2~10,240,000					
Frequency Characteristics								
Sine	25MHz		35MHz	60MHz	80MHz	100MHz		250MHz
Square	5MHz		15MHz	30MHz				50MHz
Pulse	5MHz		15MHz				25MHz	
Triangle, Ramp	1MHz		3MHz					5MHz
Noise (-3dB)	25MHz BW		35MHz BW	60MHz BW	80MHz BW	100MHz BW		120MHz BW
Harmonic Wave	12.5MHz		17.5MHz	30MHz	40MHz	50MHz		125MHz
Resolution	1 µHz or 10 digits							
Accuracy Stability	±2 ppm at 25°C±5°C							±1 ppm at 0-40C
Aging	±1 ppm, per 1 year							
Tolerance	±1 ppm							
Output Characteristics (not specifically marked, the default load is 50Ω)								
Output amplitude	1mVpp to 10Vpp (≤ 25MHz, into 50Ω. 2mVpp to 20 Vpp open-circuit) 1mVpp to 5Vpp (≤ 60MHz, into 50Ω. 2mVpp to 10 Vpp open-circuit) 1mVpp to 2.5Vpp (≤ 100MHz , into 50Ω. 2mVpp to 5 Vpp open-circuit)						1mVpp to 10Vpp (≤ 40MHz, into 50Ω. 2mVpp to 20 Vpp open-circuit) 1mVpp to 5Vpp (≤ 80MHz, into 50Ω. 2mVpp to 10 Vpp open-circuit) 1mVpp to 2.5Vpp (≤ 120MHz, into 50Ω. 2mVpp to 5 Vpp open-circuit) 1mVpp to 1Vpp (≤ 250MHz, into 50Ω. 2mVpp to 2 Vpp open-circuit)	
Bandwidth flatness	≤10MHz: ±0.2dB ≤60MHz: ±0.3dB ≤100MHz: ±0.5dB (relative to 100 kHz Sine wave, 1 Vpp,50Ω)						≤10MHz: ±0.2dB ≤60MHz: ±0.3dB ≤100MHz: ±0.5dB ≤160MHz: ±1dB ≤250MHz: ±1.5dB (relative to 1kHz Sine wave, 1 Vpp,50Ω)	
Amplitude Accuracy	± (2% of setting + 1 mVpp)(1kHz sine,0V offset, >10mVpp)							
Resolution	0.1mVpp or 4 digits (The amplitude ≥ 1Vpp is 1mVpp)							
Output Impedance	50Ω (Typical)							
Output protection	Short circuit protection, the output will be automatically turned off when overloaded							
DC Offset — Range	± (10 Vpk – Amplitude Vpp / 2),(High resistance)							
DC Offset — Accuracy	± (3 % of |setting| + 5 mV + amplitude Vpp * 0.5%)		± (1 % of |setting| + 5 mV + amplitude Vpp * 0.5%)					
DC Offset — Resolution	0.1 mVpp or 4 digits (The amplitude > 1 Vpp is 1 mVpp)							
Sine wave Characteristics								
Harmonic distortion (DC Offset set to 0V)	DC to 25MHz: <-50dBc Typical (0dBm)		Typical (0dBm) DC to 1MHz: <-65dBc 1MHz to 10MHz: <-60dBc 10MHz to 60MHz: <-55dBc 60MHz to 100MHz: <-50dBc				Typical (0dBm) DC to 1MHz: <-65dBc 1MHz to 10MHz: <-60dBc 10MHz to 120MHz: <-50dBc 120MHz to 250MHz: <-45dBc	
Total harmonic distortion	< 0.1 %, 10 Hz to 20 kHz, 1 Vpp		< 0.05 %, 10 Hz to 20 kHz, 1 Vpp					
Non-harmonic distortion	Typical (0dBm) ≤25MHz: <-45dBc		Typical (0dBm) ≤10MHz: <-70dBc >10MHz: <-70dBc + 6dB/octave					
Phase noise	10MHz: ≤-110dBc/Hz Typical (0dBm, 10kHz offset)							
Square wave Characteristics								
Rise/fall time	< 30ns		< 8ns					<5ns
Overshoot	Typical (100 kHz, 1 Vpp) < 5% (50Ω)		Typical (100 kHz, 1 Vpp) < 3% (50Ω)					
Duty cycle	50.00% (fixed)							
Triangle wave Characteristics								
Linearity	< 0.1% of peak output (typical 1 kHz, 1 Vpp, symmetry 50%)							
Symmetry	0.0% to 100.0%							
Pulse wave Characteristics								
Period	200 ns to 1000 ks		66.667 ns to 1000 ks	40 ns to 1000 ks				20 ns to 1000 ks
Pulse Width	≥ 48ns		≥ 18ns	≥ 12ns				≥7ns
Duty cycle	0.1% to 99.9% (limited by the frequency setting)							
Rise and fall time	≥ 32ns (limited by the pulse width setting)		≥ 8ns (limited by the pulse width setting)					≥7ns (limited by the pulse width setting)
Overshoot	Typical (100 kHz, 1 Vpp) < 5%		Typical (100 kHz, 1 Vpp) < 3%					
Noise wave Characteristics								
Types	Gaussian white noise							
Bandwidth (-3dB)	25MHz BW		35MHz BW	60MHz BW	80MHz BW	100MHz BW		120MHz BW
Harmonic wave Characteristics								
Harmonic number	≤16							
Frequency Range	1µHz to 12.5MHz		1µHz to 17.5MHz	1µHz to 30MHz	1µHz to 40MHz	1µHz to 50MHz		1µHz to 125MHz
Harmonic type	Odd, even, sequential, custom							
Harmonic amplitude	Each harmonic amplitude can be set							
Harmonic phase	Each harmonic phase can be set							
Modulation Characteristics								
AM — Carrier	Sine, Square, Ramp, ARB(except DC) (ARB length is 8192)							
AM — Modulated signal source	Internal or External							
AM — Internal modulation waveform	Sin, Square, Ramp, Noise, ARB							
AM — Internal amplitude modulation frequency	2 mHz to 1 MHz							
AM — Depth	0% to 120%							
DSB-AM — Carrier	Sine, Square, Ramp							
DSB-AM — Modulated signal source	Internal or External							
DSB-AM — Internal modulation waveform	Sine, Square, Ramp							
DSB-AM — Internal amplitude modulation frequency	2 mHz to 1 MHz							
DSB-AM — Depth	0% to 100%							
FM — Carrier	Sine, Square, Ramp, ARB(except DC) (ARB length is 8192)							
FM — Modulated signal source	Internal or External							
FM — Internal modulation waveform	Sine, square, ramp,noise,ARB							
FM — Internal amplitude modulation frequency	2 mHz to 1 MHz							
FM — Frequency offset	2 mHz ≤ offset ≤ min (carrier frequency, carrier maximum frequency carrier frequency) by default, the smaller of the two							
PM — Carrier	Sine, square, ramp, ARB (except DC) (ARB length is 8192)							
PM — Modulated signal source	Internal or External							
PM — Internal modulation waveform	Sine, square, ramp, noise, ARB							
PM — Internal amplitude modulation frequency	2 mHz to 1 MHz							
PM — Phase deviation range	0° to 180°							
PWM — Carrier	Pulse							
PWM — Modulated signal source	Internal or External							
PWM — Internal modulation waveform	Sine, square, ramp, noise, ARB (except DC) (ARB length is 8192)							
PWM — Internal amplitude modulation frequency	2 mHz to 1 MHz							
PWM — Offset	Offset 0 to min (min is the smaller value of pulse wave duty cycle and 100%-pulse wave duty cycle)							
ASK — Carrier	Sine, square, ramp, ARB(ARB length is 8192)							
ASK — Modulated signal source	Internal or External							
ASK — Internal modulation waveform	50% duty cycle Square							
ASK — ASK frequency	2 mHz to 1MHz							
PSK — Carrier	Sine, square, ramp, ARB(ARB length is 8192)							
PSK — Modulated signal source	Internal or External							
PSK — Internal modulation waveform	50% duty cycle Square							
PSK — PSK frequency	2 mHz to 1MHz							
FSK — Carrier	Sine, square, ramp, ARB(ARB length is 8192)							
FSK — Modulated signal source	Internal or External							
FSK — Internal modulation waveform	50% duty cycle Square							
FSK — FSK frequency	2 mHz to 1MHz							
3FSK — Carrier	Sine, square, ramp, ARB(ARB length is 8192)							
3FSK — Modulated signal source	Internal							
3FSK — Internal modulation waveform	50% duty cycle Square							
3FSK — FSK frequency	2 mHz to 1MHz							
4FSK — Carrier	Sine, square, ramp, ARB(ARB length is 8192)							
4FSK — Modulated signal source	Internal							
4FSK — Internal modulation waveform	50% duty cycle Square							
4FSK — FSK frequency	2 mHz to 1MHz							
BPSK — Carrier	Sine, square, ramp, ARB(ARB length is 8192)							
BPSK — Modulated signal source	Internal							
BPSK — Internal modulation waveform	50% duty cycle Square							

	BPSK frequency	2 mHz to 1MHz						
QPSK	Carrier	Sine, square, ramp, ARB(ARB length is 8192)						
	Modulated signal source	Internal						
	Internal modulation waveform	50% duty cycle Square						
	QPSK frequency	2 mHz to 1MHz						
OSK	Carrier	Sine wave						
	Modulated signal source	Internal						
	Internal modulation waveform	50% duty cycle Square						
	Oscillation time	8ns to 249.75s						
	OSK frequency	2 mHz to 1MHz						
SUM	Carrier	Sine, square, ramp						
	Modulated signal source	Internal or External						
	Internal modulation waveform	Sine, square, ramp, noise, ARB						
	Internal amplitude modulation frequency	2 mHz to 1 MHz						
	Depth	0% to 100%						

Sweep Characteristics

Carrier		Sine, square, ramp, ARB (except DC) (ARB length is 8192)						
Minimum/maximum starting frequency		1uHz						
Maximum stop frequency								
Sine wave		25MHz	35MHz	60MHz	80MHz	100MHz	250MHz	
Square wave		5MHz	15MHz	30MHz			50MHz	
Triangle wave		1MHz	3MHz				5MHz	
Arbitrary wave		15MHz	15MHz (built-in waveform) or 25MHz (user-defined waveform)					
Types		Linear, logarithmic, Step						
Sweep direction		Up / Down						
Sweep time		1 ms ~ 500 s ± 0.1%						
Trigger source		Internal, external, manual						

Burst Characteristics

Waveform	Sine, square, ramp, pulse, Noise(Except N Cycle) ,ARB (Except DC) (ARB length is 8192)
Types	Count (1 to 1,000,000 cycles), Infinite, gated
Trigger source	Internal, External, Manual
Carrier frequency	2mHz to BW/ 2
Trigger cycle	20ns - 500 s (Min = Cycles * Period)
Gated source	External trigger

Counter Specifications

Measurement function		Frequency, period, positive pulse width, negative pulse width,duty cycle
Frequency Range		100 mHz - 200 MHz
Frequency resolution		7 digits
Coupling method		AC, DC
Voltage range and sensitivity(non-modulated signal)	DC offset range	±1.5V
	DC coupling	100mHz - 100 MHz: 250 mVpp - 5 Vpp (AC+DC) ,100 Hz - 200 MHz: 400 mVpp - 5 Vpp (AC+DC)
	AC coupling	1Hz - 100 MHz: 250 mVpp - 5 Vpp , 100 Hz - 200 MHz: 400 mVpp - 5 Vpp
	Pulse width and duty cycle measurement	1 Hz - 10 MHz (250 mVpp -5 Vpp)
	Input resistance	1 MΩ
	Sensitivity	Can be set high, medium and low
	Trigger level range	±2.5 V

Power Amplifier Characteristics

Max Output Power		10 W
Gain		X 10
Bandwidth (at full power)		5Hz to 100kHz
Offset		<7%
Input Impedance	-	10 kΩ	-
Output Impedance		<2 Ω
Max Input Voltage		2 Vpp
Max Output Voltage		20 Vpp
Output Slew Rate		100mVp-p to 3.3 Vp-p
Max Output Power		5V/us

Input/Output Characteristics

Channel coupling		Channel copy, amplitude syn, frequency syn, align phase
External modulation input	Input frequency range	DC - 100 kHz (Due to hardware limitations, it is best to set the external modulation frequency to be less than 20KHz)
	Input level range	± 1V full scale
	Input impedance	10 kΩ (typical)
External trigger input	Level	TTL-compatible
	Slope	Rising or falling (selectable)
	Pulse Width	>100ns
External clock input	Impedance	1MΩ, AC coupling
	Input level range	1Vpp to 3.3Vpp
	Lock time	<1s
	Lock range 10 MHz ± 50Hz	10 MHz ± 50Hz
Internal clock output	Frequency	10 MHz ± 50Hz
	Impedance	50 Ω, DC coupling
	Amplitude	1.2Vpp (50Ω)
Sync Output	Level	3.3V (LVTTL)
	Impedance	50 Ω, DC coupling
	Maximum frequency	1MHz

General Specifications

Display	Type	8-inch color LCD display	
	Resolution	800 Horizontal ×480 Vertical pixels	
	Color	65536 colors, 16 bits, TFT	
	Touch screen capacitive	-	Multi-touch
Communication Interface		USB Host, USB Device	USB Host, USB Device, LAN
Power	Voltage	100 - 240 V (± 10%), 50 / 60 Hz	
	Power consumption	Less than 50VA	
	Fuse	250V, F2AL	
Temperature	Satisfy the specification	18 °C to 28 °C	
	Working temperature	0 °C to 40 °C	
	Storage temperature	-20 °C to 60 °C,Humidity: ≤70%	
	Installation category	CAT II	
Relative humidity		Less than 35°C: ≤ 90% relative humidity	
		35°C to 40°C: ≤ 60% relative humidity	
Height		Operating 3,000 meters	
		Non-operation 12,000 meters	
Pollution Degree		IEC 61010 degree 2, Indoor use	
Safety designed		EN61010-1	
Cooling method		Smart fan cooling	
Mechanical Specification	Dimension	340 mm (Length) × 177 mm (Height) × 90mm (Width)	
	Weight	Weight Approx. 2.5 kg	
Accessories		DFTC x 1, USB Cable x 1, AC Power Cord x 1	
		For AFG-4125E/4125AE BNC to Alligator Clips Cable x 1	
		For AFG-4225E/4235 BNC to Alligator Clips Cable x 2	
		For AFG-4260/4280/4210H/4225H BNC Cable × 2	
Others	Adjustment interval	The recommended calibration interval is one year	