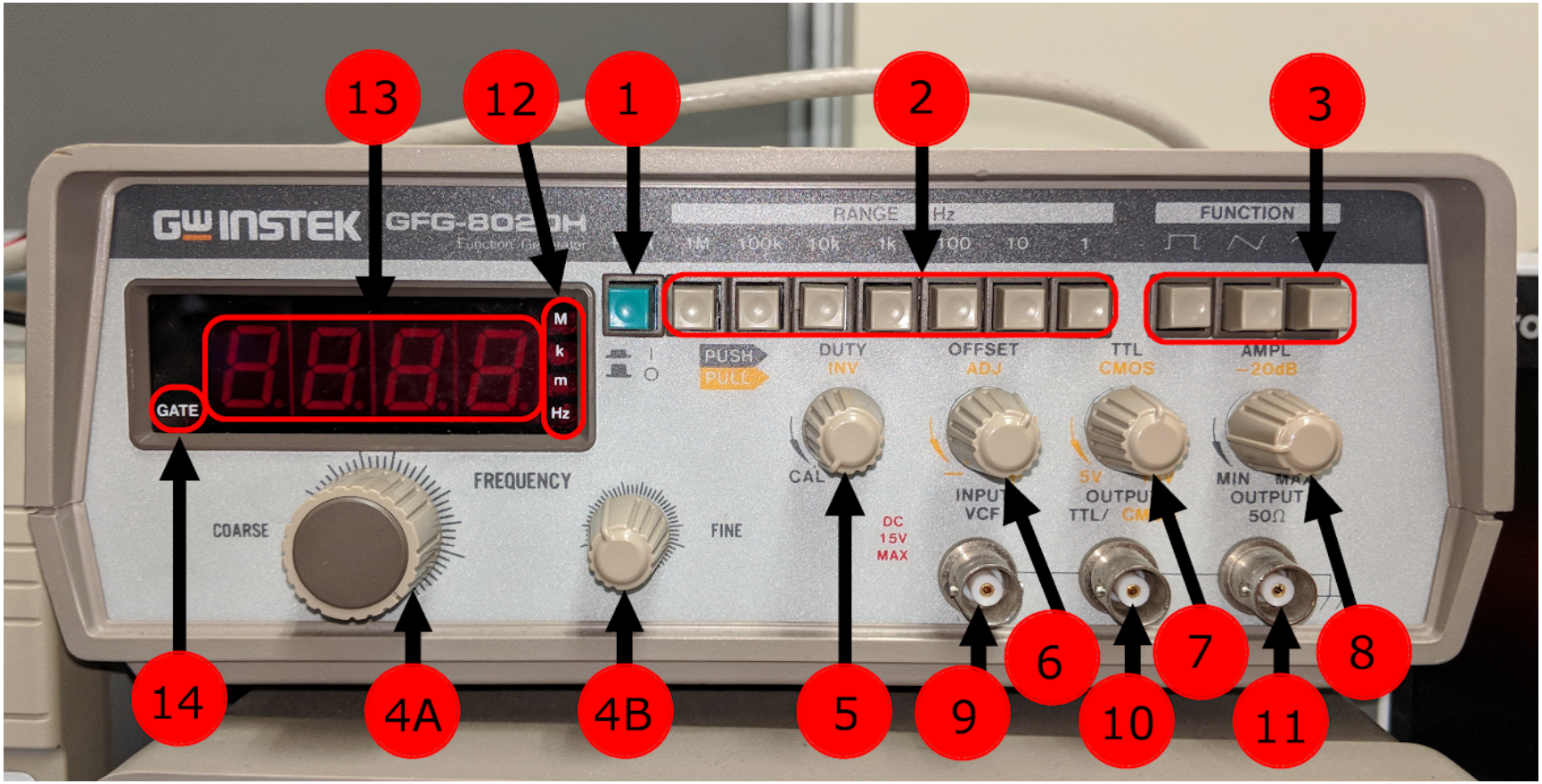
GW INSTEK GFG-8020H Function Generator



Item	Label and Name	Description	
1	Power Switch	The power switch turns the device on or off. When the button is depressed the device will be on.	
2	Range Selectors	This bank of switches is used to select the frequency range of the output signal. Only one frequency range may be selected at a time by pushing the button corresponding to the prefered frequency range. A selected frequency switch will become raised when another frequency is selected.	
3	Function Selectors	This bank of switches is used to select the desired output function type (Square, Triangle, and Sine). Only one function may be selected at a time by pushing the button corresponding to the prefered function. A selected function will become raised when another function is selected.	
4A	Frequency Adjustment Knob COARSE	This knob adjusts the output frequency of the waveform over a wide range, but with less precision than the Fine Frequency Adjustment Knob.	
4B	Frequency Adjustment Knob FINE	This knob adjusts the output frequency of the waveform over a narrower range, but with more precision than the Coarse Frequency Adjustment Knob.	
5	DUTY/INV Knob	PUSH: While this knob is pushed in the knob controls the duty cycle of the waveform ranging from 50% to 100%.	PULL: While this knob is pulled out the output will be inverted; the knob will now control duty cycles between 50% and 10%.
6	OFFSET/ADJ Knob	PUSH: While this knob is pushed in the DC offset is disabled.	PULL: While this knob is pulled out ADJ (Adjustment) control is selected, allowing the user to control the DC offset of the output waveform.
7	TTL/CMOS	PUSH: While this knob is pushed in TTL is selected as the output signal type for the TTL/CMOS output (#10).	PULL: While this knob is pulled out CMOS is selected as the output signal type for the TTL/CMOS output (#10). This knob provides CMOS Level Control from 4V (+/-1V) to 14.5V(+/-0.5V).

8	AMPL/~20dB	PUSH: While this knob is pushed it provides attenuation control of the output waveform ranging from 20dB to 40dB.	PULL: While this knob is pulled out it provides attenuation control of the output waveform ranging from 0dB to 20dB.
9	INPUT VCF	The Voltage-Controlled Frequency Input is provided to allow for external control of frequency sweeping. A supplied voltage of +10V will result in the frequency being swept down to 10:1. A supplied voltage of -10V will result in the frequency being swept up to 1:10.	
10	OUTPUT TTL/CMOS	The TTL/CMOS Output is provided as the source of the TTL and CMOS signals. One of these signals will always be selected as a result of the position of the TTL/CMOS knob (#7).	
11	OUTPUT 50Ω	The 50Ω Output is the generic waveform output, it is the source of all of the waveforms other than TTL and CMOS. 50Ω is the internal resistance of this output circuit and should be accounted for when using this device.	
12	Units Indicator	Displays the current SI prefix corresponding to the current waveform frequency	
13	Counter Display	Displays the current internal frequency of the waveform.	
14	Gate LED	The Gate LED signals when the function generator is sampling the produced waveform to update the frequency display.	

For more information on TTL and CMOS logic, Sparkfun has created good educational material on these subjects.
Sparkfun TTL logic: https://learn.sparkfun.com/tutorials/logic-levels/ttl-logic-levels
Sparkfun CMOS logic: https://learn.sparkfun.com/tutorials/logic-levels/33-v-cmos-logic-levels

GW INSTEK. (1998). *Digital Function Generator Model: GFG-8020H: User Guide.* Retrieved from http://www.gwinstek.com/en-global/products/Signal_Sources/Analog_Function_Generators/GFG-8020H