

Tenma 72-5015 Function Generator

Quick Guide



The Tenma 72-5015 Function generator is a multiple output repetitive function generator. It is capable producing a sine, triangle or square wave with an adjustable frequency and amplitude, as well as a digital square wave output. The waveform symmetry and base amplitude voltage can be modified, as well as setting the frequency to sweep between two limits at an adjustable rate.

Display and Display mode:

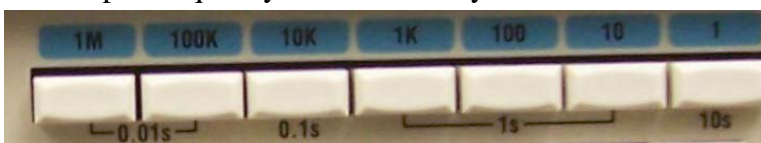
The frequency output display can be set to display the output frequency of the function generator or can be used to measure an external digital frequency.



The display indicates the frequency and the lit indicator below the display indicates the frequency range. The EXT button, when depressed, switches the display into counter mode. Leaving this button out allows the display to indicate the frequency that the generator is set at. There is also an attenuation button to the right of the EXT button. This allows the incoming signal to be attenuated, or reduced by 20dB if the signal amplitude coming in is too large.

Frequency setting:

The output frequency is controlled by a combination of controls. The range buttons select the range of the signal to be generated.

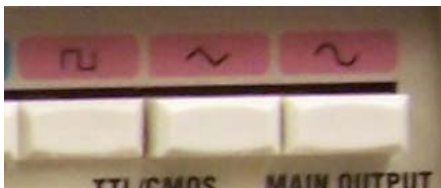


These buttons are used in conjunction with the vernier knob to select the desired frequency.



This is a continuously adjustable knob that allows the adjustment of the frequency between 0.2 and 2 of the selected frequency range.

Waveform Shape:



The waveform shape is selected by three buttons located at the upper right hand corner.

Pressing one of these three buttons allows you to select either a sine wave, triangle wave or square wave.

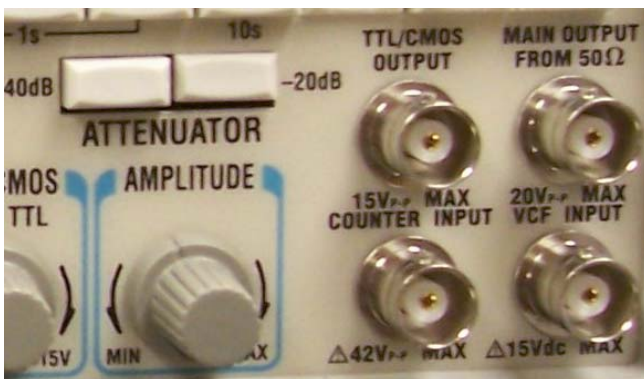
In addition to the basic wave shape, it is possible to modify the waveform by using one or more of the two OFFSET and SYMMETRY functions.



The OFFSET function allows the user to adjust where the zero crossing point of the repetitive waveform is. This can be adjusted either positive or negative. (note that this control and the amplitude control will interact with each other.) Leaving the knob pressed in disables this function.

The DUTY function will allow you to cause the output wave to be non-symmetric. As an example the triangle wave can be skewed to be a sawtooth in either direction, or anyplace in between the two extremes. Leaving the knob fully counterclockwise in the “CAL” position disables this function.

Amplitude Control and Output:



The AMPLITUDE vernier adjusts the peak to peak value of the output signal within the limits. Selecting the -20dB or -40dB button will lower the output range allowing lower peak to peak values. Pressing both at the same time will provide a -60dB attenuation.

The MAIN OUTPUT connector is the location that the signal is actually generated on. This is where you will

connect to the unit to obtain your useable signal. The TTL/CMOS output jack generates a digital square wave that is representative of the frequency set, with the period matting that of the analog waveform. The voltage on this is adjusted by the Digital adjustment knob. Pushing the knob in locks the output in 5V mode. Pulling it out allows you to adjust the output from 5 to 15 volts peak. This square wave ALWAYS sits on 0 volts and never goes negative.



Sweep Mode:

In addition to the basic signal, this unit has the ability to “sweep” the base frequency through some range. The SWEEP controls are the portion that controls this. Under normal operation the width knob is pushed in, disabling this function. When pulled, the WIDTH knob starts the sweep mode. The WIDTH knob controls how wide the sweep frequency varies. The RATE knob controls how fast it varies. Pulling the RATE knob changes the sweep rate from linear to logarithmic.

