

# Frequency Generator

Order Code **FGEN-PAMP**



The Frequency Generator is a companion to the Vernier Power Amplifier (order code PAMP), which allows the user to create a variety of waveforms at up to 15 kHz. Use the supplied BNC to audio cable to connect CH1 of the Frequency Generator to the Audio In port on the Power Amplifier.

**NOTE:** Vernier products are designed for educational use. Our products are not designed nor recommended for any industrial, medical, or commercial process such as life support, patient diagnosis, control of a manufacturing process, or industrial testing of any kind.

## What's Included

- Frequency Generator
- BNC to audio cable

## Using the Product

The Power Amplifier applies a  $10\times$  gain to the signal received through the Audio In port. The following instructions are examples to help you become familiar with the Frequency Generator.

### Generating a Sine Wave Signal at 5 Hz, $\pm 3$ V

1. Use the BNC to audio cable to connect the Frequency Generator and Power Amplifier, using CH1 on the Frequency Generator. Turn the power on for both devices. By default, the Frequency Generator is set to produce a 5 V sine wave signal at 10 kHz.
2. Adjust the frequency to 5 Hz.
  - a. Press the **FREQ** button.
  - b. Use the left arrow button to move the cursor to the numeral 1 in the ten thousands place.
  - c. Turn the knob counterclockwise to change the digit to 0.
  - d. Use the right arrow button to move the cursor to the ones place.
  - e. Turn the knob clockwise to change the numeral in the ones place to 5.
3. Adjust the potential.
  - a. Press the **AMPL** button.
  - b. Use the left arrow button to move the cursor to the numeral 5 in the ones place.
  - c. Turn the knob counterclockwise to change the digit to 0.
  - d. Use the right arrow button to move the cursor to the tenths place.
  - e. Turn the knob clockwise to change the digit in the tenths place to 6.

Since the Power Amplifier gain is  $10\times$ , the result will be a sinusoidal signal at  $\pm 3$  V, for a total range of 6 V.

### Using to Output 3 V DC

**Note:** This is not the best use of this equipment, but if you do not have batteries or a DC power supply, you can follow these steps.

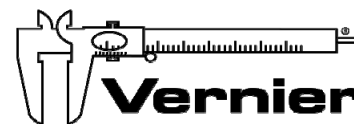
1. Use the BNC to audio cable to connect the Frequency Generator and Power Amplifier, using CH1 on the Frequency Generator. Turn the power on for both devices.
2. Adjust the frequency to zero, to output DC.
  - a. Press the **FREQ** button.
  - b. Use the left arrow button to move the cursor to the numeral 1 in the ten thousands place.
  - c. Turn the knob counterclockwise to change the digit to 0.
3. Adjust the offset.
  - a. Press the **OFFS** button.
  - b. Use the left arrow button to move the cursor to the numeral 5 in the ones place.
  - c. Turn the knob counterclockwise to change the digit to 0.
  - d. Use the right arrow key to move the cursor to the tenths place.
  - e. Turn the knob clockwise to change the digit to 3.
4. Fine-tune the offset.
  - a. Measure output voltage of the Power Amplifier using a voltmeter or voltage probe.
  - b. Adjust the offset up or down to the correct voltage.
    - To adjust downward, first turn the knob counterclockwise to change the 3 to a 2, and then move the cursor to the hundredths place. Then turn the knob clockwise while monitoring the voltage.
    - To adjust upward, first use the right arrow key to move the cursor to the hundredths place, and then turn the knob clockwise while monitoring the voltage.

**Note:** Vernier products are for educational use only.

## Warranty

Warranty information for this product can be found on the Support tab at [www.vernier.com/fgen-pamp](http://www.vernier.com/fgen-pamp)

General warranty information can be found at [www.vernier.com/warranty](http://www.vernier.com/warranty)



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