

# PM-202 Quick Start Guide

## Overview

The PM-202 is a versatile sound generator with a rich set of controls for LFO modulation, waveform mixing, filtering, envelope shaping, and delay effects. This guide provides a quick explanation of the key sections and their controls to help you start crafting your sounds.

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## LFO Section

- **Rate:** Adjusts the speed of the LFO (0.2 - 10 Hz).
  - **Shape:** Selects the LFO waveform:
    - **TRI:** Triangle wave.
    - **SQR:** Square wave.
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## VCO Section

- **Width (PWM):** Adjusts pulse width for square waves (0.5 - 0.8).
  - **PW Mode:** Selects pulse width modulation mode:
    - **LFO:** Modulation linked to LFO.
    - **MAN:** Static manual adjustment.
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## Source Mixer

- **Square:** Adjusts the level of the square wave (0.00 - 0.5).
  - **Saw:** Adjusts the level of the saw wave (0.00 - 0.5).
  - **Sub:** Adjusts the level of the sub-oscillator (0.00 - 0.5).
  - **Noise:** Adjusts the level of white noise (0.00 - 0.5).
  - **SubOct:** Selects the sub-oscillator's pitch:
    - **-1:** One octave below.
    - **-2:** Two octaves below.
    - **-2P:** Two octaves below with pulse modulation.
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## Modulator Section

- **Timbre:** Morphs between different waveforms.

- **Freq:** Modulation frequency (0.5 - 2 Hz).
  - **Amount:** Adjusts modulation depth (0.00 - 1).
  - **Shape:** Selects modulation waveform (TRI, SAW, SQR).
  - **Type:** Chooses modulation type:
    - **FM:** Frequency modulation.
    - **AM:** Amplitude modulation.
  - **Route:** Modulation routing:
    - **Pass:** The modulation signal is passed through to the audio output, allowing the modulator's effect to be audible as part of the overall sound.
    - **Mute:** The modulation signal is used internally for shaping but does not pass to the output, effectively silencing the modulator's direct contribution to the final audio.
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## VCF Section

- **Cutoff (Freq):** Sets the filter cutoff frequency (10 - 10,000 Hz).
  - **Res:** Adjusts filter resonance (0.00 - 0.99).
  - **Env:** Envelope depth for filter modulation (0.001 - 1).
  - **LFO:** Filter modulation depth from the LFO (0.01 - 1).
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## Envelope Section

- **Attack:** Time to reach maximum level (0.0001 - 3 sec).
  - **Decay:** Time to fall to sustain level (0.01 - 3 sec).
  - **Sustain:** Sustained level (0.0 - 1).
  - **Release:** Time to fall back to zero after note release (0.001 - 5 sec).
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## Delay Section

- **Time:** Delay time (0 - 7 steps based on tempo).
  - **Feedback:** Amount of signal fed back into the delay (0.001 - 0.7).
  - **Mix:** Wet/dry mix for delay signal (0.0 - 1).
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## Sequencer

- **Mode:** Selects the parameter to be sequenced (OFF, FILTER, SQUARE, SAW, MOD).
- **Multiply:** Changes the playback speed multiplier (e.g., 1x, 2x).

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## **Additional Controls**

- **Retrig:** Resets the sequencer on note retrigger.
- **Jumble:** Randomizes parameters for new sound settings.
- **Presets:** Load factory presets.