# PM Presets – PM LFSR Example 3

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This complex preset creates generative music. Melody is rather randomly. There is one fixed *start value* set for **LFSR**. It will be preset into *register* every time, when a new *polynome* is present. Feedback knots are varying with *polynome cv in*.

# Description

## Bay #1

Toggle button 3 "Run" of **PM Bttns 2/1** starts preset. It's inverted output stops and resets **PM Multi Divider**, **CA 8Step Sequencer** and **MA Drum Trigger Sequencer**.

**CA Sample & Hold** creates a really random CV. This could feed **LFSR** start value *cv in* directly.

**PM Transform** is inserted as an option. It allows you to define a CV range, which is smaller than 0 to 5 volts. That might result in less varying "random" melodies.

In this preset **LFSR** gets it's *polynome* value from *polynome cv in*.

*Register* content is preset with *start value*, when *preset trig in* recognizes OFF-ON states. *Start value* is set once manually.

Because of changing feedback automatically, created *cv out* signal is rather randomly.

**LFSR** *trig out* sends a trigger pulse each time when bit 8 gets or stays *ON*. **Pulser** changes duration of these trig pulses for **CA Envelope Generator**.

**LFSR** *gate out* is active, as long as register bit 8 is ON. For an uninterrupted group of ONs one single gate signal is provided. In this preset it is used to trig another **CA Envelope Generator** in second bay.

**LFSR** *cv out* delivers a voltage that is represented by register content. This voltage is used as pitch signal for melody oscillator.

*max* and *min* knobs set pitch range. For this example max is set to 3.0 and min is 0. So we will get a pitch within middle three octaves.

A **CA Quantizer** fits pitch CV into chosen scale. It gets two pitch CV at same time: One is from **LFSR**, the other from **8 Step Sequencer**.

Other modules on further right side build a common synthesizer voice.

## Bay #2

**CA Mini LFO** defines clock speed for whole preset.

**PM Multi Divider** channel 1 (2 : 1 divider) is used to get exactly timed trigger pulses for **LFSR** and the sequencers. Channel 2 (16 : 1 divider) represents **Drum Trigger Sequencer** steps count. Within it's 16 steps **LFSR** already solved two cycles. Channel 3 (2 : 1 divider) extends number of cycle repetitions to four.

PM Multi Divider can be replaced with similar modules of other manufacturers.

Other modules on further right side build a common synthesizer voice.

## Bay #3

Only special module in third bay is the **CA Eight Step Sequencer**. It brings some variations in scale, after **LFSR** cycle was repeated some times.

## Bay #4

This bay contains commonly built up rhythm section.

Example preset:
[PM LFSR - Example 3.voltagepreset](PM LFSR - Example 3.voltagepreset)

P.moon DOC files:
https://p-moon-modules.de/modules.htm