

Дейко В.С.

*Научный руководитель: ст. преподаватель Фролова О.А.
Муромский институт (филиал) федерального государственного образовательного
учреждения высшего образования «Владимирский государственный университет
имени Александра Григорьевича и Николая Григорьевича Столетовых»
602264, г. Муром, Владимирская обл., ул. Орловская, 23
E-mail: deather52rus@yandex.ru*

Modern Guitar Processors

In the 1960s, many artists start thinking how to make the sound of their guitar brighter, more beautiful, richer, louder. It was the time when the first effect pedals appeared. An effect pedal is a small device which add some “coloring” of the sound (some effect to a clean audio signal). The first guitar effect was distortion – sound effect which alters the instrument sound by clipping the signal, adding sustain and harmonic and inharmonic overtones. Later, many other effects appeared. Then, different pedals were joined into a circuit, allowing you to create a unique beautiful sound. For convenience, a circuit of effect pedals were joined into a pedalboard (it means that they were fixed on a hard surface and commutated). This was done primarily to save time, to avoid assembling and disassembling the whole circuit of pedals. However, the experience of many musicians showed that many separate device effects are not always convenient to use. Their serial connection requires a plurality of wires, respectively, increases the level of noise and interference, etc. Manufacturers combined multiple effects in one body, so there were guitar effect processors.

Guitar effect processor is a digital device which is the emulator (simulator) of the processes occurring in the guitar tract of different devices: effect pedals, different preamps, amps, combos, cabinets and rack devices. The main principle of its work is the following: sound through the ADC comes to DSP (digital signal processor), then it is processed according to a given algorithm and is converted into sound through the DAC.

Zoom company is considered to be a pioneer in the creation of guitar processors. The first “floor” guitar processor was Zoom 505, and the first pocket g.p. was Zoom 9002.

The first processors had a small number of effects, they cost high but had poor functionality and poor quality of the emulated effects.

All guitar processors can be divided into two major categories:

- a) floor / rack versions;
- b) software version.

The processor is a digital device, which size and functionality varies from conventional transistor-based pedal to a huge pedalboard. Rack versions of the processors are used to work in studios, as they have more possibilities for adjusting sound settings than floor options. Processors in this category are available in various price versions: from budget ones to play at home to the record studio equipment. The advantages of this variant of guitar processor are:

- compact size;
- easiness in transporting;
- acceptable sound quality;
- low sound latency.

The only disadvantage is their high price.

The second category is also known as virtual guitar processors. This is a program-emulator (simulator) of the processes occurring in the guitar tract of various devices using special software algorithms to simulate the physical devices of the electronic signal processing of electric guitar. There are several options for software modeling: it is a VST plug-in or Standalone version. The advantages of this variant of guitar processor are:

- low price;
- low-mid sound latency;
- compact size.

The disadvantages are:

- not very good sound quality;
- dependence on the "stuffing" of the guitar and a good shield.

To sum it up, we can understand that multi-effect processors play a very important role in the creation of guitar sound, as well as help the music industry develop.