

THE ESSENTIAL GUIDE TO...



Chorus



Time to come together and master the most basic modulation effect with our novice's guide...

JARGON BUSTER

► MODULATION EFFECTS

A class of delay-based effects which are modulated (ie, controlled) by an LFO.

► LFO

Stands for Low Frequency Oscillator. Often used in synths and audio effects to control parameters that change over time.

► FLANGER

A specific modulation configuration which gives a very distinctive phased, sweeping sound.

► PHASER

Another specific modulation configuration that uses a lot of feedback to produce a very deep and resonant sweeping effect.

Having so far covered the 'bread and butter' effects in the Essential Guide series, you should now be well equipped with knowledge of the basic plug-ins and how to put them to good use in a typical production environment.

This month we'll be looking at the chorus effect in detail, saving the other two modulation effects for later on in the series. Thus far, we've repeatedly underlined the importance of using effects in moderation, and this principle is particularly applicable when using modulation effects such as chorus, flanging and phasing. Because these

effects are so distinctive, it's very important to exercise restraint – both in terms of the amount applied to any given signal, and to the number of parts on which it's used.

As with many modern day audio effects, chorus was originally devised as a means of emulating a natural

phenomenon; in this case the sound of multiple performers playing together – hence the name. Today it tends to be used as an artificial effect in its own right, since dedicated 'doubblers' or 'unison' effects tend to make a more convincing job of emulating the sound of multiple simultaneous parts. **cm**

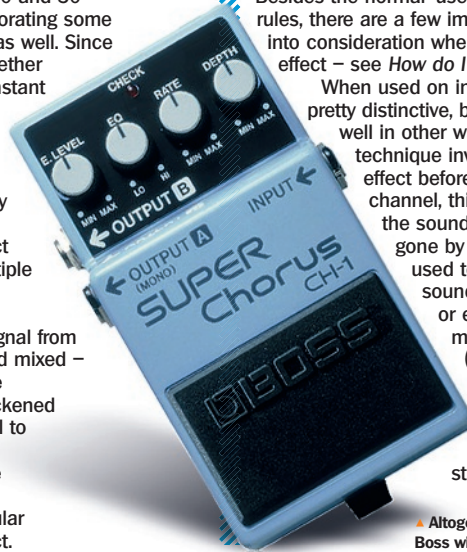
CHORUS WAS ORIGINALLY DEvised AS A MEANS OF EMULATING A NATURAL PHENOMENON



WHAT IS IT?

Even when professional musicians play the same part together live, there are inevitably small, random variations in timing and pitch between the performances (not to mention differences in playing style or tone). The chorus effect emulates this by introducing a delay unit into the signal path, typically offering between 20 and 30 milliseconds of delay and incorporating some basic pitch-shifting functionality as well. Since the pitch of two parts played together does not normally differ by a constant amount, the delay block is controlled by a Low Frequency Oscillator (or LFO for short), so that the delay time and amount of shift in pitch changes cyclically over time.

The depth of the chorus effect can be increased by adding multiple delay blocks, running in parallel together with slightly different configurations. The processed signal from each block is then combined and mixed – typically in equal parts – with the unprocessed signal to give a thickened sound with a slightly artificial feel to it. The other two modulation effects (flanging and phasing) are essentially variations on this theme, each enhancing a particular characteristic of the chorus effect.



▲ Altogether now: show 'em who's Boss with some stereo chorus

WHAT'S IT USED FOR?

Despite originally being devised as a means of simply doubling parts up, the chorus effect is now used more widely in a number of different applications. It can be used to good effect on vocals, guitars, lead synths, pad sounds and even drums and bass parts – in fact, almost anything! Besides the normal 'use in moderation' type rules, there are a few important factors to take into consideration when making use of this effect – see *How do I use it?* for more info.

When used on individual parts, chorus is pretty distinctive, but it can also be used well in other ways. One popular technique involves placing the chorus effect before a reverb in a send channel, thickening and sweetening the sound of the reverb. In days gone by this trick was sometimes used to help disguise the sound of cheap reverb units, or emulate the sound of more expensive models (depending on how you choose to look at it). We've aimed to demonstrate this technique in the three-step tutorial below.

HOW DO I USE IT?

As we've discussed in *What's it used for?*, chorus is something that's often used in conjunction with various other effects and can be applied equally successfully in either an insert or send/return setup. Some units required special configuration when used as a send effect, however, including the CF-101 chorus/flanger included with Propellerhead Reason.

Like most other effects, chorus tends to make processed parts sound less direct. In some situations, the doubling effect can actually make the processed part sound much thinner, which can have the potentially undesired effect of pushing it to the back of the mix. While this can sometimes be compensated to a degree by raising the level of the part, it may make more sense to restrict your use of the chorus effect to parts that normally sit towards the back of the mix (such as pad and string sounds, for example).

Some chorus plug-ins work in stereo by inverting one of the channels in an attempt to widen the stereo field. Unfortunately, this can lead to mono compatibility problems; in extreme cases, the effect or a processed part may actually disappear entirely from the mix when played in mono! Modulation effects in general can also suffer badly when compressed using lossy compression formats like MP3, particularly when a low bit rate has been used.

FIVE TO TRY...

Sonitus:fx Modulator
www.cakewalk.com



Fruity Chorus
www.fistudio.com



Tiny Chorus
www.tinygod.com



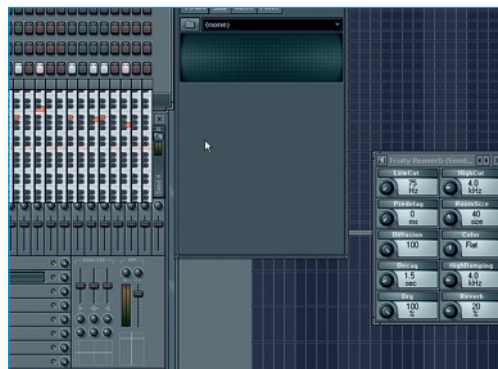
3D Chorus
www.spinaudio.com



Vintage Modulator
www.voxengo.com



STEP BY STEP Using chorus to thicken up a reverb in FL Studio



1 Load up a synth and program a simple riff. Set the Generator to send to **mixer channel 1** and increase the **Send 1** value of channel 1 to **30%**. Now select the Send 1 channel and load a Fruity Reverb into the second effect slot. >>



2 Set up the Fruity Reverb as follows: **Dry** – 0%, **Reverb** – 100%, **Decay** – 4 secs. Set up the remaining parameters to taste or go with the default values. Now press play to hear the reverb in isolation. >>



3 Load an instance of **Tiny Chorus** into the first effect slot of **Send 1** (before the reverb) and set it up as follows: **Density** – 7, **Rate** – 0.61, **Depth** – 0.21, **Feedback** – 0, **Mode** – Sine, **Mix** – 0.50. Try switching the chorus in and out so you can hear the difference it makes.