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Mastering with the Korg D1600

By Craig Anderton

The D1600 is not just a multitrack recorder/mixer, but an all-in-one box that takes your project from plugging in the first instrument to "burning" your own CD (with the optional CD-RW drive). However, simply creating a CD is not enough if you want your music to sound like commercially-available CDs, which undergo a process called "mastering" before they're duplicated.

Mastering enhances music that has already been mixed: applying effects tastefully during the mastering process can give your music more presence, power and articulation. Good mastering can make or break a recording, which is why record labels often pay big bucks for the talents of a top mastering engineer.

The D1600 includes several effects designed specifically for mastering, which insert in the Final Effect slot. Let's investigate how the D1600's mastering capabilities can help optimize your music.

Typical Mastering Effects

There are two main effects types used for mastering: equalization (typically a multiband parametric) and dynamics control.

Equalization corrects for frequency response problems. For example, a "muddy" sound might be fixed by cutting the bass response. If the sound is dull, try boosting the high frequencies. For increased articulation, a slight upper midrange boost often does the job.

Compare your mix to a hit CD in your genre of music and try to match the overall frequency response. Also, play your mix over different systems, as each one will sound different; go for EQ settings that translate over any system.

Using EQ on your entire mix will probably be unnecessary if you properly equalize individual tracks first. In addition to the channel EQ, which is good for general tone-shaping, Insert Effect #I027 (4-band parametric EQ) can fix EQ with surgical precision. To fix the overall tonal balance, insert #F010 (parametric EQ) as the Final Effect. However, you'll probably want to use the Final Effect slot for dynamics processing, which can make a mix sound "hotter." (The D1600's mastering-oriented dynamics processors also include EQ options.)

Any mix's maximum level depends on the available headroom - peaks that exceed it create distortion. So, you want peaks to hit, but not exceed, the maximum headroom. Dynamics control reduces peaks, thus opening up more headroom. You can then increase the overall level until once again, the peaks hit at the optimum level.

The D1600 offers several dynamics effect presets (#F001 - #F008) for the Final Effect slot. The first four are based on stereo compression (Effect DY1), a technique that causes a change in input level to create a smaller change in output level. This reduces peaks while

bringing up softer passages. Guitarists use compression to increase sustain, while vocalists use it to ensure a more even level. With stereo mixes, compression gives a punchy, "pop music" sound.

The other four presets are based on stereo limiting (Effect DY2). A limiter limits peaks, but doesn't affect the dynamics of lower-level signals. Subtle settings give a more "natural" sound than compression, so limiting is a favorite for acoustic music (jazz, classical, etc.). Limiting also acts a "safety valve" to make sure signals don't exceed the maximum available headroom.

Extreme amounts of limiting produce a very "hot," loud master. This is used a lot for dance music, because DJs want to minimize track-to-track level variations as they segue from one tune to another.

Getting Deeper

Often, the mastering-oriented Final Effects will be all you need. But you can also use the D1600 for more demanding jobs. For example, suppose you have a live recording done to DAT, Minidisc, stand-alone CD recorder, etc. that needs both extensive EQ and dynamics control. Record the source material into two D1600 tracks; insert parametric EQs into the insert effects, then add dynamics processing as the Final Effect. Multiband limiting (DY3) might also be appropriate as an insert effect.

Signing Off...

Although the D1600 provides the tools, it can't provide experience or talent - mastering requires subtlety. When working on a final mix, just a dB or two of EQ boost/cut or dynamics control change can make a huge difference.

To learn what these effects do, play your mix and experiment with the various parameters so you can hear how they affect the sound. If something sounds wrong - fix it! When everything seems okay, burn a CD and live with it for a while. If you can listen to it repeatedly without wanting to make any changes, you're done.

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